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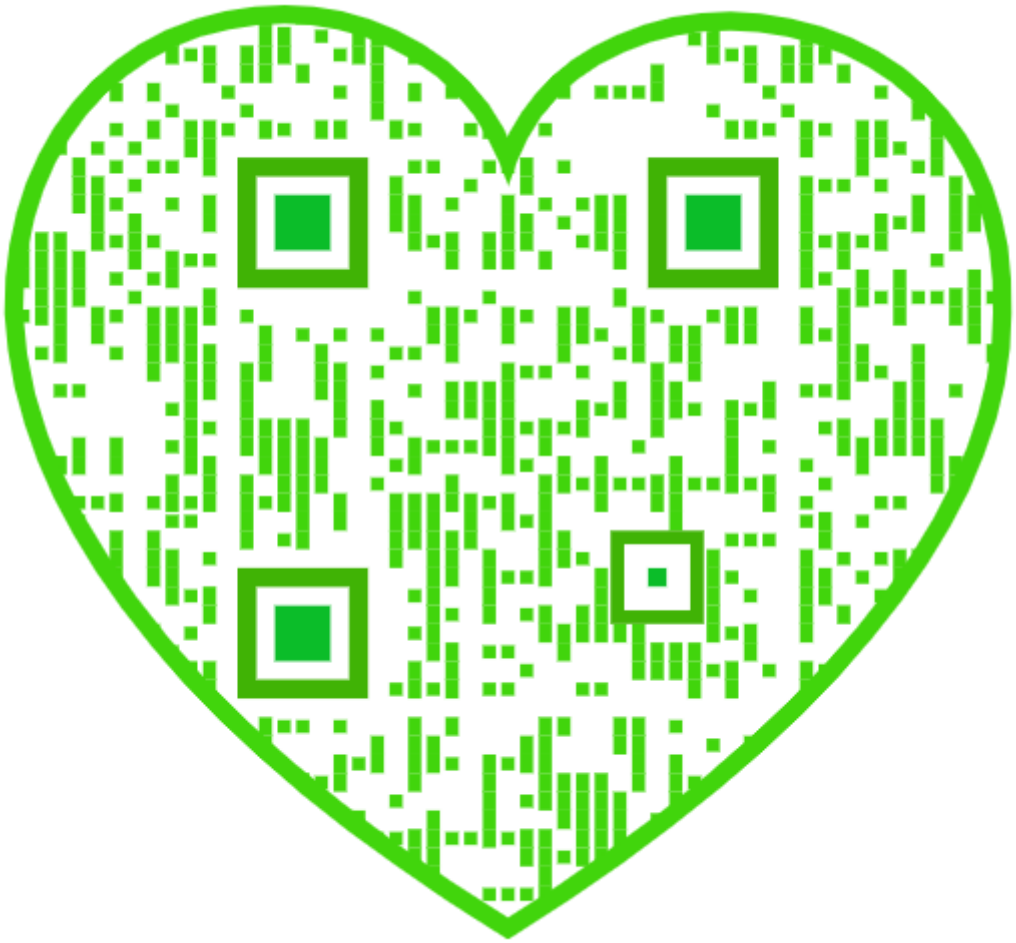

# THE

# HOUSE AND SIGN PAINTERS'

# Recipe Book,

CONTAINING

MANY VALUABLE RECIPES AND METHODS, AND GENERAL INFORMATION IN THE VARIOUS BRANCHES OF THE TRADE,

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—BY—

W. C. WARREN,

House and Sign Painter,

NOBLESVILLE, IND.

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Second Edition.

# INTRODUCTORY.

In presenting this little book it has been the writer's object to place it into the hands of painters in a handy form for future reference.

Many of these recipes have cost me several times more than the price of this work, and are a collection running through over twenty years service at the trade, with improvements on some; and a great many are my own formulas, while there are a great many that I have never experimented with and therefore give them for what they are worth.

In presenting this work the writer has strived to curtail as much unnecessary matter as possible, therefore giving more real information than some books three times as large.

He will also ask the pardon of his fellow craftmen, who have had a long and varied experience, for giving much, that they may know as well, or better, than himself. They should know, however, that there are a great many in our ranks who are young and worthy men; he hopes, therefore, that this work may be an aid to them, however slight, in placing them in among the craft.

To all those who have not had the opportunity to serve an apprenticeship under a good master, and who is ambitious to excel in the art, is this little work especially dedicated.

THE AUTHOR.

4-30452

# PART I.

## HOUSE PAINTING.

### FIRST-CLASS PRIMING.

The following is a good priming for old and new work, brick and plastered walls: Take 5 lbs yellow ochre, 5 lbs silver white wood filler, and 5 lbs white lead; thin with boiled linseed oil. It makes a good and a cheap primer, and the second and third coats of paint, will stand out better than any other primer that I ever used.

### TO MAKE A GOOD GREEN.

1st. Take 5 lbs yellow ochre, dry; 1 lb chrome yellow, dry, and 4 ozs. Prussian blue dry; grind in oil.

2nd. 5 lbs yellow ochre, dry; 2 lbs lemon chrome yellow, dry, and 6 ozs. Prussian blue, dry, and if desired there can be 5 lbs fine marble dust added to this and grind the whole in oil.

3rd. 5 lbs yellow ochre, dry; 4 lbs lemon chrome yellow, dry, and 3 ozs. Antwerp blue; grind in oil.

If you have no mill, get the colors already

ground in same proportion as dry. This makes a very clear color, which you can make either lighter or darker at pleasure. To make lighter, add more yellow; to make darker, add more blue. Use No. 1 for first and second coats; or No. 2 for first and second coats; finish with No. 3.

### SIZING FOR SOFT WOODS TO BE VARNISHED.

Take ½ gal. boiled oil, 1 oz. beeswax, cut fine and put into the oil; heat the oil hot, or until the wax is dissolved. Add to this while hot ¼ pint Japan dryer; then add 2 ozs. silver white-wood filler and 2 ozs. turpentine. This is an excellent size for pine doors. Dust work off well. Rub the size on lead pencil and soiled marks, then take a piece of sand paper and sand off and wipe off with clean rags. Then apply the size all over. It is better if you let it stand 15 or 20 minutes and rub over lightly with clean rags. Does not require to be as particular to clean corners as wood fillers.

### CHEAP ELASTIC OIL FOR PAINTING.

Take 10 gals. petroleum, 5 gals. raw oil, 20 lbs rosin, 1 lb caoutchouc, 5 lbs borax and 5 gals. soft water. Dissolve the rosin in the oil; cut the caoutchouc into small pieces and put it into the oil and allow it to stand until it is thoroughly

dissolved; dissolve the borax in the water, then mix all together and it is ready for use.

### HOW TO MIX WATER WITH OIL.

Take 3 ozs sal soda, 3 ozs caustic lime; dissolve in 1 gal. of soft water, then stir in gradually 1 qt. raw oil. Let this stand three or four days. Take one part of this mixture to two parts of raw oil. It is now ready to mix with paint.

### WOOD FILLINGS.

1ST. Take 1 lb corn starch, ½ pt. boiled oil, ½ pt. Japan, ½ lb pumice stone, ¼ pt. shellac varnish; mix well together.

2ND. 5 lbs silver white wood filler, 1 pt. boiled oil, ¼ pt. Japan; thin with turpentine to consistency of thin soft soap. For walnut wood add a little burnt umber.

Apply either first or second formulas with a stiff brush and let them stand until they have set; rub off well with rags or shavings, taking care to clean the corners well with sharpened sticks or putty-knife.

### CHEAP WOOD FILLER.

Take linseed oil, 1 qt.; turpentine, 3 qts.; corn starch, 5 lbs; Japan 1 qt.; calcined magnesia 2 ozs. Mix thoroughly.

### COMPOSITION OIL FOR MINERAL PAINTS.

(Suitable for Roofs, Barns, Fences, Etc.)

Take ½ bbl. pine tar, ½ bbl. coal tar, ½ bbl. pe-

troleum refined for illuminating purposes, 25 lbs air-slacked lime, 5 gals. asphaltum; mix cold. In cold weather it will require more petroleum than in warm weather. Add either mineral colors, venetian red, or whiting. Using the latter will give it a gray color.

### HOW TO DISSOLVE PAINT SKINS.

1ST. Take a good, tight barrel, put in 15 gals. water; to this add 2 lbs concentrated lye, 5 lbs unslacked lime. Put in all the skins and dirty buckets; stir them up occasionally. When they are all dissolved, pour off the lye water on top and the paint in the bottom will do for priming, rough siding or brick walls.

2ND. Dissolve ½ lb sal soda in 1 gal. rain water; soak the skins for two or three days, then thin with boiled oil.

### ADULTERATIONS THAT MAY BE USED IN MIXING PAINTS.

If you have a rough job, and want a good body upon it at a small cost, use for the first coat lime-water or the contents of the dissolvent barrels adding a little spanish whiting or anything you may have in the way of a pigment to fill the pores. Dust off of the road is very good after it has been well cleaned. You can use it right through with the first, second and third coats. To clean the road dust, first get a large tub, fill it with water,

making it about as thick as second coating. Let this stand a day or so, until it settles, drain off the water from the top and you will find that the finest grit is at the top, while the courser is at the bottom, which, after drying, will be ready for use. This makes a good body and a durable pigment. It can be used to adulterate any dark color.

### PENCHARD AND FAT OIL COLORS.

Various coarse paints, suitable for out door work, which are durable, may be made with oil as follows: Take a cask which will hold 20 gals., put 16 gals. of common vinegar, add to this 6 lbs litharge, stop up this cask and shake it twice a day for a week; then mix it with a half barrel of whale or seal oil, shake and mix well together, and let stand until the next day. Then pour off the clear (which will be about seven eighths of the whole;) to clear this part add 6 gals. of raw oil; shake them all well together and let them stand for two or three days, then it will be ready to grind with white lead or any color in; when ground this paint cannot be distinguished from those ground in linseed oil.

### FORMULAS FOR MIXING COLORS.

In the following formulas use the greater amount of colors as they come in rotation:

Amber Brown, Light—White lead, burnt sienna, orange chrome, burnt umber and lamp black.

Amber Brown, Dark—Burnt sienna, orange chrome, burnt umber, lamp black and white lead.

Antique Bronze—Burnt umber, lamp black, green and burnt sienna.

Apple Green—White lead, green and orange chrome.

Ashes of Roses—Tuscan red, lamp black and white lead.

Buff, Light—White lead, and yellow ochre.

Buff, Dark—White lead, yellow ochre and a little red.

Brown Stone—White lead, burnt sienna, yellow ochre and lamp black.

Bismark Brown—Burnt sienna, burnt umber, orange chrome and white lead. Another—carmine, crimson lake and gold bronze. If a light shade is desired, use vermillion instead of the carmine.

Bottle Green—Dutch pink and prussian blue, for ground; glaze with yellow lake.

Brown—Three parts of red, two of black and one of yellow.

Bronze Green—Five parts chrome green, one of black, and one of burnt umber.

Brick Color—Two parts of yellow ochre, one of venetian red, and one of white lead.

Buttercup—White lead and lemon chrome yellow.

Cream—Five parts white lead, two yellow and one of red.

Citron—Three parts of red, two yellow and one of blue.

Citrine—White lead three parts, orange chrome two parts, and one of green.

Coral Pink—Vermillion, orange chrome and white lead.

Crimson—Vermillion, carmine and a little white.

Chocolate—Burnt umber, venetian red, tuscan red and white lead. Or take Indian red and black to form a brown and tone up with yellow. Another—take lake or carmine and add to burnt umber.

Clay Drab—Raw sienna, raw umber, and white lead, equal parts and tinted with chrome green.

Canary Color—Five parts white lead and two parts lemon yellow.

Copper Color—Two parts of yellow, one part of red and one of black.

Chestnut Color—Two parts of red, two of chrome yellow and one of black.

Claret—Take red and black or carmine and ultramarine blue.

Carnation Red—Take three parts lake and one part white.

Dove Color—White lead, venetian red, and burnt umber. Another—White, red, blue, and yellow.

Dull Green—White lead, green, ultramarine blue and lamp black.

Dove Drab—White, yellow ochre and burnt umber.

Dregs of Wine Color—Tuscan red, lamp black, and white.

Drab color—Nine parts of white and one of bunrt umber.

Ecru—White, yellow ochre, burnt sienna, and lamp black. Another—take white, red, ultramarine blue and orange chrome yellow.

Emerald Color—Take emerald green (Paris) and white.

Electric Blue—Ultramarine blue, white and raw sienna.

French Gray—White, vermillion, ultramarine blue and lamp black.

Fawn—White, yellow ochre, burnt sienna, and lamp black.

Forest Green—White, chrome green and *lamp* black.

Flax Color—White, yellow ochre and chrome green.

French Red—Indian red and Eng. vermillion glazed with carmine.

Flesh Color—Eight parts of white, three of red and three of chrome yellow.

Green—Chrome yellow and Prussian blue.

Grass Green—Three parts chrome yellow and one part Prussian blue.

Gold Color—White and yellow tinted with a little red and blue.

Gazello—Tuscan red, venetian red, white and lamp black.

Green Rice—White, lemon yellow and chrome green.

Gray Green—White, chrome green and lamp back.

Hay Color—White, orange chrome, chrome green and a small amount of tuscan red.

Jonquil Yellow—Take flake white and chrome yellow, and add vermillion to carmine.

Lemon Color—Five parts lemon yellow and two of white.

Lavender—White lead, ultramarine blue, vermillion, and lamp black.

Lilac—Four parts red, three of white and one of blue.

London Smoke—Yellow ochre, lamp black, ultramarine blue and white.

Leaf Bud—White, orange chrome and green.

Leather Brown—Venetian red, lamp black, yellow ochre and a little white.

Light Gray—Nine parts white, one of blue and one of black.

Light Old Gold—Golden ochre, white lead and a little green.

Light Citrine—White lead, orange chrome and chrome green.

Light Russet—White, orange chrome, venetian red, and a little lamp black.

Light Slate—White, a little venetian red, ultramarine blue and green.

Light Tan—White, yellow ochre, burnt sienna and burnt umber.

Light Brown Stone—White, venetian red, yellow ochre, and a little tuscan red and lamp black.

Light Myrtle Green—White, chrome green, a little ultramarine blue and lamp black.

Mastic—White, yellow ochre, venetian red and lamp black.

Mauve—Venetian red, yellow ochre, white and lamp black.

Maroon—Tuscan red and a little ultramarine blue. Another—Three parts carmine and one of yellow.

Maroon Brown—Tuscan red and lamp black.

Inagenta—Carmine, cobalt and a little flake white.

Medium Gray—Eight parts white and two of black.

Myrtle Green—Chrome green, ultramarine blue, lamp black and a little white.

Old Gold—Golden ochre, white, burnt sienna, and a little green.

Olive—Orange chrome, lamp black and a little white.

Olive Light—White, orange chrome, lamp black and chrome green.

Olive Dark—Yellow ochre and Prussian blue.

Olive Drab—Raw umber, raw sienna, orange chrome, ultramarine blue and white.

Olive Brown—Three parts burnt umber and one part lemon yellow and one of green.

Oak Color—Five parts white, two of yellow and one of red.

Orange—Three of yellow and one of red.

Opera Pink—White, vermillion and ultramarine blue.

Pearl Color—White, black and red.

Pea Green—Five parts white and one of chrome green.

Purple—Three parts red, three of blue and two of white.

Peacock Blue—Cobalt, emerald green (Paris) and a little white.

Pure Gray—White, vermillion, ultramarine blue, chrome yellow and lamp black.

Primrose—White and lemon yellow.

Pink—White and Eng. vermillion.

Pompian Red Dark—Venetian red, burnt sienna and carmine.

Pompian Red Light—Venetian red, tuscan red and a little yellow and white.

Pearl Gray—White, vermillion, ultramarine blue and lamp black.

Purple Brown—Tuscan red, yellow ochre, lamp black, burnt sienna and ultramarine blue and white.

Peach Blossom—Ten parts white, two of red, one of blue and one of yellow.

Portland Stone—Three parts raw umber, three yellow ochre and two of white.

Plum Color—Two parts white, one blue and one of red.

Quaker Drab—White, yellow ochre, chrome green, lamp black and a little burnt sienna.

Quaker Green—Two parts chrome green and one part coach black.

Russet—White, vermillion, chrome yellow and ultramarine blue.

Russian Gray—White, vermillion, ultramarine blue and lamp black.

Red Slate—Venetian red, white and burnt sienna.

Russet Green — White, green and orange chrome.

Rose Color—Five parts white and two of carmine.

Shrimp Pink—White, vermillion and burnt sienna.

Spruce—Yellow ochre, white and venetian red.

Salmon Color—White, venetian and burnt sienna.

Slate—White, venetian red, ultramarine blue and green.

Straw Color—White and yellow ochre.

Sky Blue—White and cobalt blue.

Shell Pink—White, vermillion and burnt sienna.

Scarlet—Vermillion and carmine.

Smoke Drab—Yellow ochre, lamp black, ultramarine blue and burnt umber.

Sage Green—Twelve parts white, two parts green, and one-half part each of chrome yellow and burnt umber.

Sand Stone—Tuscan red, white, venetian red and lamp black.

Snuff Color—Four parts of yellow and two of vandyke brown.

Stone Color—Ten parts white, one part yellow and one half part of black.

Tally Ho.—White, yellow ochre, venetian red, lamp black and a little green.

Tan Color—Burnt sienna five parts, chrome yellow two parts, raw umber one part and white one part.

Terra Cotta—White, burnt sienna and lamp black.

Torquoise Blue---White, cobalt blue and emerald Geeen (Paris).

Violet---Five parts red, four parts blue and one of white.

Willow Green---Five parts of white and two of verdigris green.

Wine Color---Three parts carmine and two of ultramarine blue. Another---Take tuscan red, lamp black and ultramarine blue.

Yellow Bronze---White, chrome yellow and green.

### A CHEAP FIRE-PROOF ROOFING.

Take common building or felt paper and after it is well tacked down, use paint made with composition oil, previously described; and while wet throw coarse sand over it.

### FIRE PROOF PAINT.

Take 35 lbs dry zinc, 15 lbs air-slacked lime, 25 lbs white lead, 5 lbs sulphate of zinc. Mix the dry zinc and air-slacked lime together and grind in the cheap elastic oil, then add ½ gal. 35° soluble glass and the white lead; add then the sulphate of zinc. Stir well and it is ready for use.

### PAINT FOR SMOKE STACKS.

Take thin coal tar mixed with finely ground plumbago. Make of the consistency of ordinary paint.

### CHEAP OUT SIDE PAINT.

Take two parts in bulk of water lime, grind it fine, and add one part in bulk of white lead ground in oil; mix them thoroughly; add linseed oil enough to thin to proper consistency to spread under the brush.

### TO MAKE WATER PROOF CLOTH.

Take 8 lbs rosin, ½ lb caoutchouc, 1 gal. boiled oil, 3 gals. prepared oil. Dissolve the rosin in the oil; cut the caoutchouc into small pieces and put in the boiled oil and let it stand in the sun until it is dissolved; then mix all together and apply with a brush. It should be kept warm while using. Wet the cloth with alum water.

Another method which is very easy to make canvass water-proof without altering its appearance or pliability, by saturating it with a boiling and strong solution of soap.

Pressing out the excess of soap, and then submitting it for a short time to the action of a hot bath of alum, sulphate of aluminum, or acetate of lead; which operation causes the formation of an insoluble alumina of lead soap, which will permeate all the pores of the cloth and render it water-proof. Another---Dissolve together 8 ozs. white resin pulverized, 6 ozes. bleached linseed oil, 1½ ozs. white beeswax. Thin with turpentine,

apply to both sides of the cloth while it is stretched tight.

### SUBSTITUTE FOR WHITE LEAD.

Take 75 lbs dry white zinc, 30 lbs marble dust; mix well together; run through a mill, or if you have no mill run through a fine strainer. If you want a clear white or light tint job, use raw oil with a little turpentine. For plastered walls (inside) you will find that you will have a much better job than you would by using white lead; the work stands out better. If you want a cheap job use the composition oil for first and second coats.

### ADULTERATIONS FOR WHITE LEAD.

Take 50 lbs white lead, 25 lbs white zinc, dry, and 25 lbs Paris white. You will find that the paint will still have a good body and reach as far as all pure lead. Mix the white zinc and Paris white together first, and run through the strainer; then put in the lead after it has been broken up well.

### TO TEST THE PURITY OF WHITE LEAD.

Take a piece of firm close grained charcoal and near one end hollow out a cavity say $\frac{1}{2}$ inch in diamater and $\frac{1}{4}$ inch in depth. In the hollow, place the sample of lead to be tested say about the size of a pea, then apply continuously to the hottest part of a jeweler's blow pipe. If the sample

be strictly pure it will, in about two minutes, be reduced to metallic lead, leaving no residue; but if it be adulterated to the amount of ten per cent. only with oxide of zinc, sulphate of baryta, whiting or any other carbonate of lime which are the only substances used in adulterations or if it be composed entirely of these materials, as is sometimes the case in some cheap lead, it cannot be reduced, but will remain on the charcoal an infusible mass. After blowing upon it, say one half minute, take a knife blade and turn it over so the heat can pass under as well as over it. Use a common star candle, lard oil lamp or a jeweler's alcohol lamp, a coal oil lamp should not be used.

### TO TEST THE PURITY OF LINSEED OIL.

Take a test tube, or a long 2 oz. bottle; pour in equal parts, of the oil to be tested and commercial nitric acid (say one-half oz. each) shake the mixture well, and let it stand for twenty minutes. If the oil is pure, the upper strata will be a straw color, and the lower strata colorless; even 5 per cent. adulteration will change the upper strata to a dark brown or black, and the lower strata to a bright orange or dark yellow, according to the material used as an adulterant.

### METALLIC ENAMEL PAINT.

To make a paint for covering bodies such as stove pipes, ranges, and other surfaces that are to be

heated. To make a good job it will require first to coat the object with a covering of the common graphite or black lead. Only use such colors as are unaffected by the heat; such as burnt umber, burnt sienna, burnt ochre, green earth, red or violet, oxide of iron, best sort of artificial ultramarine blue, pure chrome red, chrome green, burnt egg shell, white zinc and the French bronze.

All the above colors can be used; any tint made by combining them with soda diluted one-half with soft water. Bear in mind that it will be necessary to keep stirring them while applying them, as they set very quick in the pot, being similar to plaster Paris in that respect. The iron should be a little warm so that evaporation will take place at once.

### SHELLAC VARNISH.

Such as is used for killing knots and gum spots n pine boards, previous to painting. It is made by taking best alcohol 1 gal.; nice gum shellac, 2½ lbs; place the bottle or can in a position where it will just keep a little warm and it will dissolve quicker than if it is cold or too hot.

### TO NEUTRALIZE PINE KNOTS.

Before priming give them a thin coat of red lead, white lead and whiting.

### COPAL VARNISH.

Take 5 lbs pulverized rosin, 1 qt. turpentine

and let stand until the rosin is dissolved, add 1 qt. boiled oil, 1 pt. Japan dryer; mix well, and if too heavy thin with turpentine. This cannot be beat.

### HOW TO MAKE JAPAN DRYER.

Take linseed oil, 1 gal., gum shellac, 3¼ lbs, litharge, turkey, umber and red lead, each ½ lb; sugar of lead, 6 ozs.; boil in the oil 4 hours, remove from the fire and add 1 gal. turpentine.

### HOW TO MAKE GLOSS VARNISH.

Take 1 gal. raw oil, boil it for one hour, then add 2 lbs rosin, stir until disolved, add half-pint turpentine, 1 oz. gum camphor, then strain.

### TO MAKE HARD OIL FINISH.

Take 375 parts linseed oil boiled with 75 parts litharge and 45 parts pulverized minium, boil until it turns brown, then add 250 parts pulverized amber melted in 30 parts linseed oil, boil and stir for a few minutes, cool, settle and decant the clear varnish. Another method is to take linseed oil ½ gal. rectified spirits 1 pt.; oil of turpentine 1 qt.; powdered rosin 6 ozs., mix.

### CARRIAGE TOP DRESSING.

Take 150 parts asphaltum melted in 3 parts boiled oil, add 33 parts turpentine, 20 parts benzine, which will make lustrous enamel for carriage tops.

### VIOLIN VARNISH.

Take juniper gum 80 gr., mastic 100 gr., elemi 30 gr., concentrated essence of turpentine 60 c. c., castor oil 25 c. c., alcohol 1 liter. Color with Dragon's blood, Gamboge, or any shade of aniline desired, dissolved in alcohol.

### PAINT FOR BLACK BOARDS.

1ST. 2 qts. alcohol, ½ lb shellac, 1 oz. lamp black, 2½ ozs. ultramarine blue, 4 ozs. powdered Roschelle salts, 6 ozs. powdered pumice stone.

2ND. 2 qts. alcohol, ½ lb shellac, 4 oz. Ivory black, 2½ oz. emery flour, 2 oz. ultramarine blue.

3RD. Take equal parts of pumice stone and red lead and grind together with turpentine, a little raw oil and best varnish; add enough lamp black to make a dark color, then thin with turpentine until it will dry perfectly flat; apply the slating with a flat brush as fast as you can to keep from showing laps; have the surface smooth and free from grease; shake the bottle or can well before pouring out and keep it well corked.

4TH. Take 1 qt. shellac varnish, 3 oz. pulverized pumice stone, 4 oz. pulverized rotten stone, and 4 oz. lamp black. Add the varnish a little at a time to the above, stir well to break the lumps. This will cover about 75 square feet, two coats, and can be used within an hour apart. Have your brush free from varnish or oil colors, lay on the color very fast.

5TH. Take common glue 4 oz. dissolve in ¾ qt. warm water, add 3 oz. flour of emery and enough lamp black to give it a black color, stir well and apply with a woolen cloth smoothly rolled. Three coats will be sufficient for the job.

SIZE FOR KALSOMINE OR PAINT.

Take 1¼ lb sal soda, ¼ lb borax and 5 lbs rosin; put in 5 gals. boiling water, and keep stirring until all is dissolved; take one pt. of this solution to 30 pts. of water, which has had 1¼ lb. glue dissolved into it. Then boil both solutions 10 or 15 minutes, strain and it is ready for use. It is an excellent size for plastered wall to be kalsomined or painted.

SIZE FOR WALL PAPER OR WOOD TO BE VARNISHED.

Take one pound of white glue, let it soak 10 or 15 hours in enough soft water to cover it, then add 2 gals. boiling water, and ½ gal. wood naptha, mix well together. This will keep well without souring. Common glue will do for rough work; common starch makes a good size for wall paper. Another way is to use a chilled white glue size; this being a jelly will not run and cause one color to flow into another. It should be given two coats. Be particular to get into all corners and leave no "holidays."

SIZE FOR WALLS TO BE PAPERED.

Where walls have been white washed the fol-

lowing is a good size: Take ½ lb glue let soak in enough water to cover it for 10 to 12 hours: add 1½ gal. boiling water, then add 1½ oz. alum. Another method, where walls have been white washed is to coat them over with vinegar, this kills the white wash, where sometimes it will discolor the paper.

### GOOD PASTE FOR PAPER HANGING.

To make a bucket of paste take flour enough to make 3 pts. of batter, the consistency of thick cream; the flour to be mixed with luke warm water; to this add 1 oz. powdered or crushed alum, about a thimble full of fine rosin and ½ oz. sugar of lead. To this add boiling water (stirring all the while) until the paste is thoroughly cooked. This paste will keep for several days.

### PASTE FOR PAINTED OR VARISHED WALLS.

To make paper stick on painted or varnished walls add to a bucket of paste (previously described) 3 sheets of isin-glass which have been dissolved in 1 pint of warm water, also 2 ozs. glycerine; pastry gelatin will answer as a substitute if the isin-glass can not be had.

### TO CLEAN SOILED WALL PAPER.

Take 2 or 3 quarts of wheat bran and tie it up in a coarse flannel cloth and rub it over the paper. It will clean the whole paper of almost all de-

scriptions of dirt and smoke, as well as almost any other means used.

Another method is, to make a stiff dough of rye flour and water, to which has been added ½ oz. powdered concentrated lye, to about 4 lbs of dough. In rubbing over the paper, turn dough over after each stroke and keep working it.

### TO CLEAN PAINTED WALLS.

The best mode is for two men to work, one to follow the other. There is not as much danger of streaking or spotting the wall. A stretch of 3 or 4 feet, is as much as should be done at a time. This should be dampened with clean water, using a sponge for the purpose; following up with a suds made of castile soap, dissolved in warm water, apply it with a kalsomine brush scrubbing lightly. After the dirt has been softened by this means, scrub with a solution made as follow: 1 lb castile soap shaved fine, 2 lbs whiting, and ½ gal. water, boil the soap and water together, then stir in the whiting. When cold dip the brush into the mixture and scrub, taking care not to scrub harder than is required to remove the dirt. Then sponge off thoroughly with clean water, and wipe down with a wet chamois (wrung dry). Avoid using too much water as to run down and streak the walls. Begin at the bottom and work up. On the final washing, care should be taken to keep clean water, changing often.

KALSOMINING.

A good job of kalsomining depends largely on the condition of the walls. All old kalsomine should be washed off clean. If white wash the lime should be scraped, or the lime neutralized. All cracks and holes should be plastered up with Plaster Paris, and if any bad stains, kill them with a solution of hot alum or shellac varnish, or by pasting a piece of white paper over them. Take best Gilders whiting or Paris white, place in a bucket and put enough water to cover it. In another bucket put some light colored glue ½ lb to 10 or 12 lbs whiting, and also put enough water to cover the glue and let it stand 10 or 12 hours (or over night) then pour ½ gal. boiling water over it when it will be dissolved, then add this to the whiting. Make the desired tint you wish, trying a little on a piece of paste board and drying it, which will give you the shade when dry on the wall. For a pink, use aniline color which has been previously dissolved in acohol. Make one coat of kalsomine do if possible. If two coats are necessary, go over second time with the kalsomine cold.

In kalsomining, do not lay it off all one way, as you would paint, but cover every spot, working it every way and get it even and smoothe without brush marks. Keep the edges all along wet, for if a part of it is allowed to dry or sink in, it will make a bad and rough job. It is better to have

two men to work it, carrying the work right along as fast as possible, A good job cannot be done unless the suction of the walls be stopped, which can be done with a glue size and a little soap and alum dissolved into it. Nothing though is better, however, than a thin coat of hard oil finish, or Damar varnish: but these must be thoroughly dry first.

### LIME FOR KALSOMINING.

Take ½ bu. of fresh lime, 1 lb salt, ½ lb sulphate of zinc, 1 gal. sweet milk.

For brick work where exposed to dampness, take ½ pk. fresh lime with enough water to make thin paste. run through strainer, add 1 lb soda which has been previously dissolved in boiling water; then make a thin paste by cooking 1 lb rice flour, ¼ lb of glue; mix with the lime compound while hot; add then ¼ lb sal soda dissolved in water; stir all together and let stand a few days before using. Warm before using.

### GOVERNMENT WHITE WASH.

Slack ½ bu. lime with boiling water and keep it covered during the process, strain and add 1 peck of salt dissolved in warm water, and add 3 pounds of rice flour boiled in water to a thin paste, add ½ lb whiting and 1 lb clear glue, which has been previously dissolved in warm water. Allow this to stand several days, and apply hot.

### UNCLE SAM'S WHITE WASH,

The mixture that is used to shine up the light houses on the coast.

"To 10 parts of freshly-slacked lime, add 1 part of the best hydraulic cement. Mix well with salt water and apply quite thin."

### GOOD PAINT FOR SHINGLE ROOFS,

That can be applied cold and dries quickly. Take one barrel of coal tar, ten pounds of asphaltum, and ten pounds of ground slate. Mix by the aid of heat and add two gallons of dead oil.

### TO MAKE A CHEAP PAINT.

Mix up a pot full of pure lead paint in the ordinary way, and pour it into a tub or large keg, then take about the same quantity of Gilder's whiting into another pot and break it up pretty stiff and fine with water; pour the two together in the tub or keg and stir the mass somewhat vigorously for awhile. The lead in oil and the whiting in water will mix and you will have just double the amount or paint, which will be thicker than it was before. This paint works well in warm weather and by no means so bad a paint as four-fifths of the so called mixed paints. It has not the covering capacity nor does it make quite as good a job as pure lead.

### CHINA GLOSS WHITE.

Put on your priming out of pure white lead

and oil; second coat, mix the lead half and half oil and turpentine; third coat, use best French zinc mixed flat with turps only; fourth coat, a little zinc and clear damar varnish; fifth coat, a little less zinc, with damar varnish. Sand paper well between each coat and be particular to give plenty of time for each coat to get thoroughly dry or the work will chip crack.

### WASH FOR BRICK WALLS.

To make them look fresh and new. Dissolve 1 oz. of glue to every gallon of water, and add while hot, a piece of alum the size of a hen's egg, ½ pound of venetian red, and 1 pound of Spanish brown. Try a little on the bricks, if too dark add more water, if too light, add more red and brown.

Another method: Where a new laid brick wall, containing a large amount of moisture and if painted immediately in this condition and just before winter sets in. The paint will retain the moisture and the cold will freeze it and help to crumble the brick, and also new laid mortar still retains considerable of the costic properties of the lime, which will soon eat up and destroy the paint.

If there be reason to make a good appearance at once, it is better to put on a coat of wash made as follows: Take water, cement, venetian red and a little lime or lime-water and salt. This will give

it a good appearance and last for a year or so, and will not prevent the evaporation of the water from the walls, and allow the caustic lime to act upon the sand of the mortar and harden it. When the wall is properly seasoned it can be painted with a good body of oil paint.

### SYLVESTER'S PROCESS FOR EXCLUDING MOISTURE FROM EXTERNAL WALLS,

Which consists in using two washes or solutions for covering the surfaces of brick walls, one compound of soap and water, and the other of alum and water. The proportions are three quarters of a pound of soap to one gallon of water; half a pound of alum to four gallons of water. Both substances must be perfectly dissolved before using.

The walls should be perfectly clean and dry, and the temperature of the air should not be below 50 degrees Fahrenheit when the compositions are applied.

The first or soap wash, should be laid on when at boiling heat, with a flat brush, taking care not to form a froth on the brick work. This wash should remian twenty-four hours so as to become dry and hard before the second or alum wash is applied, which should be done in the same manner as the first. This should also remain twenty-four hours before a second coat of soap wash is applied. These coats are to be repeated alternately

until the walls are impervious to water, which will take four coatings. The alum and soap thus combined form an insoluble compound, filling the pores of the masonry and preventing the water from penetrating the walls.—N. Y. Sun.

### TO REMOVE OLD PAINT FROM WOOD.

Make a strong solution of sal soda and water, and apply; when the paint is soft, scrape away, and wash well with clean water.

Another Method—Take 3 parts of fresh lime and slack it, add 1 part of pearlash, and dilute with water to a mushy consistency, apply with a brush; let stand about twenty-four hours, when the paint will be soft enough to be scraped away. Wash well.

Another Method—Use a strong solution of concentrated lye and water: when paint is soft scrape away with putty knife and thoroughly wash; let dry and sand paper down before painting.

### TO REMOVE OLD VARNISH.

This is obtained by mixing 5 parts of 36 per cent. of silicate of potash, 1 of 40 per cent. soda lye, and 1 of sal ammoniac (hydro-chlorate of ammonia.)

Another Method—Use a strong application of ordinary spirits camphor. It will remove almost any kind of polish or varnish.

Give the spirits time to evaporate before re-varnishing, or it will injure the new varnish.

Another plan to remove varnish from wood, is to make a strong solution of soda, soap and water, and keep the place constantly wet while scraping. This softens the varnish. Wash well, and when dry rub down with sand paper previous to re-varnishing.

### TO MAKE PLASTICO FOR WALL DECORATIONS.

Dissolve 1 lb glue in a gal. of water; add 2 lbs whiting, 2 lbs Plaster of Paris and 1 lb of keg lead. Thicken with whiting or thin with water to the desired consistency. Apply it with an old whisk broom and impress the design with a sharp stick, your fingers or a coarse comb. It will dry thoroughly in about twenty-four hours. After it is dry you can varnish, gild, or otherwise ornament to suit the fancy.

### ROUGH STIPPLE FOR COMBING, ETC.

Mix equal parts of white lead, plaster Paris (best) and zinc white. Mix with linseed oil and turpentine, half and half, adding enough Japan to make the mixture adhere to the walls without sagging. It should be applied to the surface with a brush, in as thick a consistency as possible, or as thick as it can be worked with a brush—if thicker is required lay it on with a trowel.

This material, after being applied, will take the

impression of any form desired the same as wax. It can be "combed" into straight, wavy or curved lines or scrolls, which, when properly colored up, gives a beautiful and decorative effect. This material can be colored up before applying by using dry color for the desired shade.

### GOLD PAINT.

Take good bronze powder, (French gold leaf powder is the best), and mix with one-fourth extra light hard oil finish, and three-fourths turpentine. Apply with camel's hair brush. Do not mix much at a time, as it dries quickly.

### LIQUID FOR BRONZE POWDER.

Take 2 ozs. gum animi, dissolve in ½ pint linseed oil by adding gradually while the oil is being heated. Then boil, strain and dilute with turpentine.

### TO PREVENT BRONZE FROM TARNISHING.

To keep bronze striping, lettering, &c., from tarnishing, coat over with a thin coat of white shellac varnish. It is a good thing to put over striping, &c., before applying finishing varnish.

### CARE OF BRUSHES.

Keep varnish brushes in oil, wash them out in benzine before using, then wipe dry on a clean board.

Keep paint brushes in water deep enough to cover the bristles. The best arrangement is a

trough with flaring sides and 6 inches deep, 12 inches wide and 2 or 3 feet long, for a shop running two or three men. This should be lined with tin or galvanized iron.

In winter use a salt brine, as it will not freeze. Brushes should be cleaned well before using.

Another Method—Add 1 oz. glycerine to each gallon of water, will prevent brushes from freezing up.

### CHEAP PUTTY FOR OUT OR INSIDE.

Take Spanish whiting and a good heavy paste of rye flour, a small quantity of Japan and linseed oil. Color to suit the work. This dries quick and hard. Use more oil for outside work. To keep it for a length of time, add a few drops of carbolic acid.

### PUTTY FOR SINKS, ETC.

Take litherage 20 oz., dry powdered burnt lime 1 oz. Make into a putty by adding linseed oil.

### SOLUBLE GLASS FOR PAINTING.

This substance has been but little used for painting purposes, for the reason that when combined with earth or mineral paints, silica is formed, a substance which is almost insoluble. This can be prevented by the following process, and it will give you a paint or strong hardness, of great durability, possessing many good qualities in general. This has been used successfully on mantles, &c.

The dry paints should be ground in a size made of starch in sufficient quantity to keep the color from rubbing up. Whiting or Paris white can be used in place of dry white lead, and gives almost as good results.

First coat the work with 35 per cent. soluble glass, thinned down with warm water, let stand one hour or so; then put a coat over the work with the water color heretofore described until you have a good body, then rub down well with fine sand paper, then put on a coat of soluble glass. You can put up a first-class job in one-half day. Give this a fair trial and you will use it continually. The soluble glass will cost you about 50 cents per gallon. Then it can be thinned down one-half with water, making the cost only 25 cents per gallon for your material. Heat will not blister work coated with this preparation.

### FLOAT MARBELIZING.

This is the process by which iron or slate mantles are done, and wood can be done the same way with good results.

Give the wood a good body suitable for wood, have it well rubbed down and finish with the ground desired.

Have a tank large and deep enough for the work you have to do; fill the tank with water, add 2 ozs.

of gum tragacant for every gallon of water in the tank.

Mix your colors with turpentine and a very little raw oil. Put colors in two bottles, add 1 teaspoonful of beef gall, shake up well; sprinkle the colors evenly on the water, and when you have the colors arranged satisfactory dip the work in evenly, and when dry varnish.

### FURNITURE POLISH.

Take 2 ozs. rosin, 12 ozs. alcohol 98 per cent., 4 ozs. sulphuric ether, 2 ozs. balsam fir, and 8 ozs. boiled oil.

Another—Take 1 qt. boiled oil, 1 pt. turpentine, 1½ ozs. muriatic acid, 1½ ozs. alcohol. Mix, and polish with Canton flannel.

Another—Raw linseed oil dr. xx, spirits turpentine dr. v, muriatic acid dr. iv. Mix, and apply with flannel rag or sponge.

### TO PREVENT PAINT FROM CHIPPING OFF.

On inside work, where the paint has been on a long time, the paint transforms into a species of glass, and paint only adheres as it would to glass. It becomes so hard that even sand paper will not take hold of it. In such cases, if repainted, and it receives a blow or scratch, it will chip off. The only way to prevent it is either to burn the paint off—which is a very expensive mode—or, a cheaper way is to go over the surface of the work before

re-painting with a moderately strong solution of ammonia and soda, thoroughly washing it, afterwards follow with the painting.

### WAXING FLOORS.

Clean the floor thoroughly by scrubbing, then, when dry, clean again with turpentine. If the floor is rough, give it a coat of wood-filler or shellac. Melt bees wax and turpentine, and apply with a brush, then polish with a large scrub brush or horse brush.

### FROSTING.

To make a good imitation of frost on glass, make a liquid of epsom salts and lager beer. This will last for a long time away from natural frost and exposure. To bind it firmly apply a thin coat of damar varnish over it, which may be colored with any transparent tube colors, which gives a very beautiful effect.

Another—Grind your dry color in a liquid made by dissolving gum arabic in soft water with common salt. This will adhere so well that it will eat into the glass and last for years.

Another method, which is used most generally for frosting office doors, &c., is at follows: Take keg lead and mix to the consistency of second coating with two-thirds boiled oil and one-third turpentine. Apply to glass with a brush, rubbing it out well; then take a fine-grained muslin cloth,

dampen it slightly, and place inside of it a wad of raw cotton and pounce the glass all over, taking out, all brush marks, &c. Another way—Mix flake white with boiled linseed oil, then add powdered mica.

TO MAKE GLASS IMPERVIOUS TO THE SUN'S RAYS.

Pound gum adragant to powder, and dissolve for twenty-four hours in the whites of well-beaten eggs. Lay this on the glass with a soft brush.

WALNUT STAIN.

1st. To make a stain without the use of oil, take 2 drachms permanganate of potash, add enough soft water to make proper consistency; when dry finish with varnish.

2nd. A very good stain is obtained by taking brown asphaltum varnish and thinning with turpentine to proper consistency.

3rd. Take 2 parts ground burnt umber, 1 part ground burnt sienna, 1 part Japan and thin with turpentine and boiled oil in equal proportions.

4th. Mix vandyke brown with a small amount of pearlash in a little cold water, then heat it until it becomes a paste, then add a quart of boiling water gradually and stir. Apply the mixture with a piece of woolen cloth.

5th. Take turpentine 1 gal., pulverized asphaltum 2 lbs, dissolve in an iron kettle on a stove, stirring constantly. The addition of a little varnish with the turpentine improves it.

### CHERRY STAIN.

1st. Take 1 part ground Indian red, 1 part ground venetian red, 1 part Japan, and thin with turpentine and boiled oil in equal proportions.

2nd. Rain water 3 qts., anotta 4 ozs., boil in a copper kettle until the anotta is dissolved, then put in a piece of potash the size of a walnut, keep the solution on the fire for a half hour longer and it will be ready for use. Keep it well corked when not using it. It makes poplar, pine or light woods so near the natural color of cherry that it is hard to tell.

### MAHOGANY STAIN.

Boil ½ lb madder and 2 ozs. logwood chips in 1 gal. of water and brush well over while hot. When dry go over with pearlash solution, 2 drachms to the quart of water. By using it strong or weak the color can be varied.

Another stain for mahogany in oil may be obtained by simmering linseed oil for awhile, to which has been added alkanet root. The oil should be watched closely.

### TO DARKEN MAHOGANY WOOD

With a deep tint and still retain plenty of color, a small amount of chromate of potash may be melted in a quart of water and applied over the wood with a piece of woolen cloth.

ROSEWOOD STAIN.

Take alcohol ½ gal., camwood 1 oz., set them in a warm place for 24 hours; then add 1½ ozs. extract of logwood, nitric acid ½ oz. When all is dissolved it is ready for use.

Another may be obtained by using the first part of first formula of ebony stain, leaving off the vinegar solution.

Another formula is to use the RED STAIN; when dry, follow with the 5th formula of walnut stain.

BIRCH STAIN.

A good imitation is obtained by using a solution of chromate of potash dissolved in water.

EBONY STAIN.

Take extract of logwood and boil for three hours in water and apply while hot, which will make a red stain. Then coat this over with vinegar solution, to which has been added rusty nails three or four hours before.

Another—Boil 1 lb of logwood chips or dust in 4 quarts of water, add a double hand full of walnut hulls, boil the second time, then add 1 pint of vinegar, and it is ready for use. Apply hot and follow, when the wood is dry, with a hot solution of copperas, 1 oz. to each quart of water.

RED STAIN.

Boil 1 lb Brazil wood and 1 oz. of pearlash in 1

gal. water, and while hot brush over the work until proper color.

Dissolve 2 oz. alum in 1 quart of water, and brush this solution over the work until it dries.

### WINE COLOR STAIN.

Boil 1 lb of Brazil wood with 3 quarts water for an hour, add ½ oz. cochineal, boil again for half an hour gently; strain, and it is ready for use.

### BLUE STAIN.

Boil 2 oz. Indigo, 2 lbs of wood and 1 oz. alum in 1 gal. of water. Brush well over the work until thoroughly stained.

### GREEN STAIN.

Take ½ lb of best verdigris and 1 oz. Indigo; boil in 6 pints of vinegar. Allow the veneers to simmer until the color has penetrated.—School of Design.

### GRAINING GROUNDS AND GRAINING COLORS.

Oak—Ground should be a light straw color, made with white lead, colored with French ochre, orange chrome yellow or chrome yellow and a small portion of venetian red.

Graining Color.—1 part burnt umber, 3 parts raw sienna with a small portion of burnt sienna: all the colors should be finely ground in oil; thin down with equal parts of boiled oil and turpen-

tine with a little Japan and a small portion of bees wax melted in the oil.

Ash.—Ground same as oak, only 2 shades lighter, graining color same as oak only less of burnt sienna.

Chestnut.—Ground as ash, tinted a little with black; graining color same as oak but also tinted a little with black. In shading use a little extra burnt sienna.

Walnut.—Ground should be a light yellow chocolate, which is made of 1 part French ochre, 2 parts burnt umber, 1 part of Indian red and white led of equal proportions.

Graining Colors.—Use burnt umber in oil, thinned as described in oak graining color. Dampen the surface to be grained with water, using a sponge or chamois, then take burnt umber mixed in equal proportions of beer and water and rub in a small part at a time very lightly, then pounce or stipple with blender or dry brush and when all is over and dry, brush over the surface with oil, Japan and turpentine in equal parts, let dry, then proceed with the oil graining color.

Butternut or White Walnut.—Ground 4 or 5 shades lighter than walnut. Stipple and use same graining color as walnut; it is of the same grain as walnut, only lighter.

Cherry.—Ground same as oak, only reddened up with burnt sienna.

Graining Color.—Burnt umber, raw sienna and burnt sienna in oil in equal parts, shade with burnt sienna.

New way to grain cherry over white or light paint: Stipple with burnt sienna in stale beer or ale; move the stippler slowly, and make as fine grain as possible. When dry give it a thin glaze with burnt sienna in oil, and when dry varnish.

Another Way—For the ground work, take white lead, colored with burnt sienna—not too dark—using for graining color, burnt sienna with a very little burnt umber, stipple your work very finely, then wipe out your heart pieces, not too many, as cherry has but little grain. When this is dry, use the same colors for glazing as for graining color, only a little more umber. When dry follow with a good coat of varnish.

Mahogany.—Ground orange red, 2 parts orange chrome, 1 part Indian red.

Graining Color.—Can be used in oil or distemper, 2 parts vandyke brown, 1 part burnt sienna, 1 part burnt umber.

Rosewood.—Ground deep orange. 1 part orange chrome, 3 parts Indian red.

Graining Color.—2 parts drop black and 1 part

burnt umber, can be used in either oil or distemper.

### WEIGHTS OF PAINTS.

Turpentine, 1 gal. weighs 5 lbs.

Linseed oil, 1 gal. weighs 7½ lbs.

Varnish, 1 gal. weighs 8 lbs.

Japan, 1 gal. weighs 9 lbs.

Pure lead mixed, 1 gal. weighs 20 lbs.

### LIST OF PRICES—HOUSE PAINTING.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1 coat, | new | work | | | | 10 | cts. | per yard. |
| 1 " | old | " | | | | 12 | " | " " |
| 2 " | new | " | | | | 20 | " | " " |
| 2 " | old | " | | | | 25 | " | " " |
| 3 " | new | " | | | | 28 | " | " " |
| 3 " | old | " | | | | 32 | " | " " |

Where two colors are used add 5 cents per yard, and each additional color 3 cents per yard.

### SANDING.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2 coats paint, | 1 coat sand | | | | | 30c | per yd. |
| 3 " " | 2 " " | | | | | 50c | " |
| 1 " " | 1 " " | over sanded work | | | | 22c | " |
| 2 " " | 2 " " | | | | | 40c | " |

Rough brick work, freestone, rough castings same price as over sanded work.

For penciling brick work 15 cents per yard.

Where the painters puttys nail holes, &c., add

5 per cent., also if he has to clean off new work after plasterers add 5 per cent. to the bill.

INSIDE WORK.

| | | |
|---|---|---|
| 1 coat or priming on wood | ..... | 10c per yd. |
| 2 " and sand papering, puttying, &c | ... | 22c " |
| 3 " " " " | ..... | 35c " |
| 4 " " " " | ..... | 48c " |

IMITATION OF WOOD OR STONE.

| | | | | | |
|---|---|---|---|---|---|
| Common Graining | 1 | coat | varnish | ..... | 35c per yd. |
| Fair " | 1 | " | " | ..... | 40c " |
| Fair " | 2 | " | rubbed down | ... | 55c " |
| Best " | 1 | " | " | ..... | 65c " |
| Best " | 2 | " | and rubbed | ..... | 80c " |

ESTIMATING WORK.

To make a proper estimate of work, a painter must know what a square of one hundred feet, or a yard of nine feet can be painted for, priming, second and third coats, as work is generally done. He must get the actual surface of the work to be painted, (take for instance the outside of a house,) get its length, breadth and heighth, and if there should be several heighths, measure each by itself; but be careful to get a correct measurement of the whole house in superficial feet.

Now you should notice the condition of the house, whether better or worse than the average run of houses; whether more difficult to get at.

You can then calculate the price per square or yard, then by the whole number of squares or yards.

On the inside of a house, take the same course. Take the measurement of the doors, if there be different sizes, measure each size seperately then by the number of that size, then the same course by the widows, then figure the base, stairways closets and other parts not enumerated. And now after finding the whole number of feet, divide this by 9 which will give you the number of yards (which is handier for inside work) in the whole job. Now consider at what price per yard it can be done for; you must have good judgment, if there be anything peculiar about the work make the proper allowance therefore pro or con.

If you make an error in your judgment, you will either lose the job or lose money.

Some do their estimating a little different, they make allowance for extra work and trouble when measuring; take for instance a cornice, they will girth it from one and one half to three times its actual measure, according to their judgement of extra work or the amount of time consumed over plain work.

Blinds, picket fence and lattice work may be measured one and one half times, some measure lattic work and blinds twice.

Therefore to estimate correctly on a job you must know just how many square feet there is in it and if any peculiarities make the proper allowances.

When this has been determined, you are prepared to give an honest and intelligent bid.

### TO PAINT PLASTERED WALLS.

Put on a coat of good oil paint, right on the bare walls; when dry, over this apply a coat of glue size just strong enough to stop the suction, if it is too strong, the paint applied over it is liable to peele off, if the size should want to crawl, a little alum will prevent it. This sizing coat if properly done, will save perhaps two coats of paint. Finish the last coat of paint as you desire. Can be made an egg shell gloss, or a full gloss with varnish and oil added to the color. Kitchens, dinning rooms and halls look well in gloss, but other rooms look better with a flat surface.

### PAPER HANGING.

To do a good job of paper hanging the most essential thing is to have good tools, for a good mechanic cannot do a good job with a poor outfit of tools. Good tools are the most satisfactory and cheapest in the long run. The tools should be an eight or ten inch bristle smoothing brush; a sixteen and a ten or twelve inch shears; a paper knife; a good rule; a seam roller; smoothing

roller, for borders and decorations; a straight edge; plumb-bob; a three inch wall scraper; paper board; and step ladders. These are the tools for general work. We next proceed with a pail of paste (previously described.) Should the paper to be put on be a metallic, use a little carbolic acid in the place of the alum to keep from souring, as alum is liable to turn gilt paper dark. If the room to be papered is a hard finish and not too badly smoked up, all that is neccessary to prepare the walls is to sweep over with a broom. If they are smoked and dirty, it is a good idea to go over them with a weak glue and alum size. If the walls have been papered before, go over and take all that is loose off with the wall scraper, if it is a fine paper you are going to hang, it is better to dampen the old paper good and scrape all off, patch up all the bad places in the walls with plaster of Paris mixed with paste. If walls have been white washed, they should invariable be given a size with glue and alum, (previously described.) Having your walls ready, get the length that your paper wants to be, cut two or three double rolls, or if for ceiling, enough to cover it, now turn your paper over, if your paper is already trimmed, put the trimmed edge toward you, push all the paper about one and one half inch back from the edge of board closest to you, then draw first sheet over so it will come to edge of board, this prevents the

paste from forming on the trimmed edges and making bad work.

Some paper hangers never trim the paper until it is pasted, which is the best and neatest method, (but probably to the unexperienced the most difficult.) They paste their paper fold top end two-thirds over, bottom end over to top. Be careful to get your paper folded smooth and the margin edges even; if a cheap paper, take your sixteen inch shears and trim; if it is fine paper use straight edge and paper knife.

Commence at an opening and hang the strips as nearly perpendicular as possible.

Brush the paper from the center down and to each side. If you have wrinkles in the paper draw it off to wrinkle and brush down again, when at the baseboard run the point of your ten or twelve-inch shears along edge of base, draw paper off apiece and cut it off nice and even, leaving no haggled or uneven edges. When you come to an opening measure top and bottom of space, and after your sheet is pasted, folded and trimmed, split it to the widest space, and the surplus paper on casing you can cut it off with paper knife, use it as you would a saw, or you can pull the paper off apiece and trim with shears.

Take balance of sheet and proceed on other side of opening. Split your paper likewise for

the corners. Do not attempt to turn the paper around the corners, unless it be a very small edge.

Cut the border in such lengths as can be easily handled, say six or seven feet, (always cutting in the same figure), paste and fold up each end, so the lines will meet exactly and cut. In papering a ceiling have a scaffold formed of a couple of step ladders and a plank. If it is to be a plain ceiling strike a line across the end you wish to commence at, 18 inches from wall and lay your first sheet by that. If you wish to put on a stiling and mould or extension line your ceiling all around, the width you wish the stiling, and on the end you commence to lay on your "field." Strike another line away from the stiling line as the width of your mould or extention. By this commence to lay your field by, this frequently saves an extra sheet of "field" paper. In hanging your "field" paper have your paper folded to center, take a roll of paper with your left hand, and catch under it, and with your right hand undo the right end of the paper, (take care not to let it touch the other paper and blur it,) place the paper to its proper place with your right hand, holding up the balance with your left, then commence to smooth the paper with your brush, working from right to left, when midway undo the bottom end and proceed as before. Be careful to get all edges fastened with brush or seam roller.

Do not use paste too heavy as it is liable to squelch out at edges and make bad work.

### SIZING FOR PINE WOOD.

Dissolve ½ lb best clear glue by heating in one gallon of stale beer, apply with soft bristle brush, keeping the sizing hot while applying. If sizing is too thick add more beer.

# PART II.

## SIGN PAINTING.

The sign painter finds the letters most used are the Roman, Italic, round and square block, the half block or Egyptian and script.

The most difficult letter of all to make is the Roman. The Egyptian is easiest and most simple and most generally used by new begginers.

THE ITALICS have all the form of the Roman letters only slightly condensed, and at an angle of about sixty degrees. The lower-case Italics are seldom used by a sign painter, but is a good letter in show card lettering or wherever a quick, off-hand letter is required. There is no rule governing these letters, if gracefully formed, and they may be crowded somewhat without spoiling their general appearance.

THE BLOCK LETTER is the boldest of all letters, and is governed by the same rules in regard to spacing, heighth and breadth as the Roman capitals, but, unlike that letter, it may be elongated or condensed to a great extent without injuring its appearance.

THE EGYPTIAN OR HALF BLOCK letter may be counted the sign painter's stand-by or a substitute

for all other letters, for when all others fail for want of space or other reasons, they will be found to fill the requirement. When properly spaced and proportioned they are inferior to none for beauty, but as substitutes they may be condensed or spaced out to fill every conceivable space, and crowded as they often are, they fill the position given them with beauty and grace.

The Script letter makes a very beautiful sign, but it is very difficult to execute, and but few sign painters make a specialty of it. But, as a general thing, there is not enough of it done, even in our larger cities, to afford a sign painter sufficient practice to come to any degree of perfection. Good penmanship is not essentially necessary in order to become a good script painter. Some of our best are poor penmen. Writing on a sign board is altogether different from writing on paper. It is necessary, however, to have a pretty correct idea of penmanship of a good round text copy for your guide. As we have heretofore said that the Roman letters being the most difficult letter to make, as there are certain measurements for each letter. For instance, take the letters B, D, E, G, O, P, Q, R, T, and the character &, when properly made, will occupy one-eighth more space in width than in heighth; C, F, J, L, S, and Z, will occupy the same space in width as in heighth; A, K, N, U, V, X, and Y, one-sixteenth more

space in width than in heighth; H, one-fourth more; M, one-third more; W, one-half more space in width than in heighth; I, two-thirds of its heighth in width. All round or oval letters as C, G, O, Q and S, should project a litte above and below the lines to make them appear equal in size. The upper parts of B, E, S and R should occupy a trifle less space on the main line than the lower part; the bar connecting the H should be a little above the center, also the center bars in the E and F; the curve for P should take up just half of the letter; the finishing bar of the G should be a little less than half its heighth; the upper portions of the Y should join the main body at one-half its heighth. The width of the main body of a Roman letter should be regulated by its heighth; the main body should be one-fourth as wide as the letter is high and the fine lines one-twenty-fourth as wide. For instance, for a letter twelve inches high, the main body should be three inches wide and the fine lines one-half inch. The upper point of the A and the lower points of V, W and right lower point of N should be the same width as the fine lines.

### SPACING.

There is no rule for spacing in sign painting to designate the exact distance between the letters forming a word or sentence. It is not in good taste to crowd letters too closely or to separate

them too much. In some cities where sign painters are paid by the foot for lettering, many jobs are spoiled by being spread out too much in order to make a few feet more. Letters having small tops or bottoms should be placed nearer the preceding and the succeeding letters than if both letters run parallel with each other.

### SPACING ON LARGE SIGNS.

The painter has very often large signs on high and long walls, where your staging will not reach but a small portion of the distance. In such cases it is necessary to adopt some mode of laying off the work correctly without moving your staging or scaffold twice. In doing work of this kind I adopted the following rule: Get the length and width of your space to be lettered and the number of lines to be on it. Mark off a similar space on a piece of paper with a scale of one-fourth, one-half or 1 inch to foot as you like; then lay off your lettering just as you wish it to appear on the wall, taking great care to have your letters and spaces accurate. With this sketch and table of measurements you can commence at either end and carry as many lines as you have by adhering strictly to the above rules.

### ARRANGEMENT OF SIGNS.

The beauty of a sign depends upon the variety of letters used and their arragement into lines. A

very poor job of lettering if well arranged, will look much better than a good job of lettering poorly arranged. The repetition of the same kind of letters on two succeeding lines should be avoided. And two lines following each other should not be the same length. Where a sign is composed of several lines, curved or scroll lines may be introduced to good advantage; but they should be put in sparingly and gracefully, or instead of beautifying they will mar the design. For a sign of one line use the style letter most suitable for the space and the amount of matter to go on the sign.

### COLORING AND SHADING LETTERS.

There is scarcely no limit in the variety of colors that may be used in sign writing. However, much depends on the proper selections by the painter, and too often colors are put on with utter disregard to all the rules of harmony and good taste. White and black are the most used of all colors. A black letter on a white ground, and a white letter on a black ground are perhaps as often used as any other. For both, a white ground work is essential; the difference is while in the former the black letters are painted on the surface of white, while the latter is marked out and cut in around and filled in with black; by this mode you can get your letter much whiter and your corners much squarer than by painting the

letters on the black. Modern sign painters have very generally adopted what is termed, the cut-in process where the letter is lighter than the ground work. Black, vermillion, Indian red, green and blue are the most common colors used for cutting in work. The color of the letters or ground previous to being cut in can be white or any desired tint or two or more colors can be blended in on your sign, so arranged that part of your letter will be one tint and the other part another. An imitation of gold color is a very popular color and can be used with any of the above colors with good effect.

### SHADING FOR CUT-IN SIGNS.

Where the ground is darker than the letter, the shading should be two or three shades darker than the ground work, unless the ground is black, then the shading should be some bright color, either in one color, line shade, or a blended shade which the new beginner will find the most difficult of all shades to execute. This consists of a combination of colors and tints worked in and blended together with a beautiful effect. This shade should join up to the letter, leaving no space between the letter and shading.

### SHADING FOR ORDINARY SIGNS.

For a white ground and a black letter, the shading should be some light tint of green, blue, red or

buff, but the most prevailing color is a light warm stone color. The depth of shade, whether on the left or right side of the letter which is optional with the sign painter, should be in proportion of one-fifth of the heighth of the letter, still it can be much heavier or lighter, and to look well should be a trifle heavier on the bottom parts of the letter than on the side. There should be a space between the letter and the shade in the proportion of one-fourth inch to a six inch letter and one-half into a twelve-inch letter. Also what is termed a line shade may be introduced with good effect, and is made by running a line of color two or three shades darker than the shading color on the inner side of shade next to letter, leaving the distance heretofore stated.

A very nice ground for signs can be made by using some tint color as light blue, green, pink, buff or stone color; and where such colors are used for grounds and the letters black the shade color should be two or three shades deeper than the ground. And if the line or blended shade is used, make two or three shades still darker.

For a fancy letter either made of color, gilded on wood or glass, is what is termed a skeleton letter; the outside of the letter is composed of a line, for a six-inch letter the line should be one-fourth-inch thick and a twelve-inch letter about three-eighth inch. The inside of letter can be filled

with any color or tint (that will harmonize with the other colors) and be shaded as the outside is, only the shade should be on the opposite side from the outside shade. This kind of lettering is more difficult than the ordinary, as it takes greater care in laying off work.

### HOW TO GILD ON WOOD.

Use old fat linseed oil, the older the better, mix with chrome yellow, put in a little best Japan dryer, thin with turpentine. Apply for sign work with sable brush, as they are some stiffer than camel hair pencils. Let sizing stand until almost dry or as termed "tackey," then lay your leaf from the book; when you have gone all over the sign, burnish over with cotton. If you have more than one line of lettering to gild you can use on part of the lines nickle leaf, or the lower half of a line can be gilded with nickle leaf and the top half with gold leaf or vice versa. Nickle leaf is very cheap and will stand the weather as well as gold leaf. The XX gold leaf or deep is the kind mostly used by sign painters. Have the ground of your sign flat or the gold will adhere to other parts than the letters.

Another formula for gold size is to take 4 ozs. powdered gum animi, 1 lb linseed oil; dissolve the gum animi in the linseed oil by heating it, stirring it constantly until the gum is dissolved Strain through a coarse cloth. After it has boiled

down to the consistency of strained honey, grind it with chrome yellow enough to render it opaque, add turnpentine to make it work freely under the brush.

Or another way is, take 1 oz. finely ground ochre, 2 ozs. copal varnish, 3 ozs. raw linseed oil, 4 ozs. turpentine and 5 ozs. boiled linseed oil. If too thick to flow, add more turpentine.

### HOW TO APPLY SMALTS OR FLOCK.

To smalt or flock a gold or color letter sign, use your color very heavy and slow drying, and be sure that your color is not fat or greasy or it will spread and make ragged edges. When you have cut in all around your sign, lay it down placing large pieces of paper to catch the extra smalts; sprinkle on until the entire surface is well covered. In cut-in signs where you smalt or flock them care should be taken to have the ground work an egg shell gloss and perfectly dry, or when you apply your smalts or flock it will adhere to the letters.

### HOW TO MAKE SMALTS.

You can make your own smalts at a cost of one cent per pound. Take any good fine sand, see that it is clean, put one-half gal. into a kettle, heat it hot; keep stirring it until it is perfectly dry, then put in about 2 ozs. mixed color, the color you desire: the color should be mixed in

good boiled oil; keep stirring it until the sand is colored evenly, then spread it out in the sun to dry, stir it up occasionally and it will be ready for use; you can add a small quantity of glass frosting if desired.

### TO GILD ON GLASS.

To make your sizing, take a piece of isinglass about the size of a nickle and put in a pint of fresh rain water scalding hot, stir until the isinglass is dissolved, then filter through filter paper; add one tablespoonful of good whisky, let stand one day before using. This size will keep a year if well corked up. Good clear, white glue, I think, is better than the isinglass; using a piece about the size of a silver dime for a pint of fresh rain water; mix and filter as the isinglass. Take a smooth piece of paper the exact size of your glass, proceed to lay off your design, puncture small holes through paper on the outlines of letter; place the backside of design next to glass on opposite side from which you intend to lay your gold; having previously well cleaned your glass by taking equal parts of nitric and acetic acid in the proportion of 1 oz. of each to a half pint of water. Rub the surface of the glass with this, allowing it to remain a few minutes, then clean the glass in ordinary way, using soft water and whiting; when the whiting is dry wipe it off clean and polish with chamois skin; take good care to remove every

particle of the whiting from the surface. The punctures through the design serve for a guide to lay the gold. Apply the sizing with a flat camel's hair brush and lay the leaf with a gilder's tip; take great care to lay the leaf as smooth as possible. When the letters are all covered, let the glass get thoroughly dry by standing a few hours then burnish over with raw cotton. Proceed as before to give the work the second coat of gold, only do not use as much size, and use great care not to rub over first coat of gold but once as it will rub off if too much rubbing; when over the second time, let dry as before then burnish again; then proceed to patch up small places where there is not but one coat of gold, by dampening with corner of brush, and laying small pieces of gold on; when dry burnish the patches over; lay the design right side next to the gold, then pounce over with pounce bag (which is made by tying up about an ounce of either whiting, ultramarine blue or venetian red.) This gives an outline of the letters, &c.; then the sign is ready for backing up, which is done with asphaltum varnish or quick drying rubbing varnish mixed with dry lampblack and thinned with turpentine. When all the varnish is dry take a small piece of cotton and dampen it and rub off the surplus gold; when the sign is ready to shade, which is all backward, therefore laying on the darker shades next to

letters first then afterwards the lighter colors; finishing with the back ground last.

To keep the frost from peeling up the gold, after all is done and dry go over the whole with elastic varnish, running a little over the letters on the glass.

It is a good idea to take a scrap of glass well cleaned and try your sizing before commencing work. If too thick, the gold, when burnished with cotton, will look spotted. If too weak, the gold will rub off when it is rubbed with cotton.

### TO LAY PEARL ON GLASS.

This consists of covering the interior openings of letters on glass where they are made on the back side of the glass, with a very thin shell of pearl prepared especially for the purpose. Take a clean pencil brush and a little clear damar varnish and go over the openings of the letters two or three at a time, running a little over on the letter all around. Proceed to lay on the pearl carefully, breaking it to the proper size and fitting it as closely together as possible until the opening is covered. When the varnish is dry the pearl is firmly attached. Now mix a little silver or pearl gray and coat over the pearl, covering all the openings.

### IMITATION PEARL.

To imitate pearl for cheap sign work, such as

patent medicine advertisements, &c., is made as follows: Coat the openings in the letters with silver or pearl gray color mixed with damar varnish, put on thin and transparent. When this is dry take tin foil and crumple it up, cut it to the size and lay it over the letters. A little varnish may be used to make it adhere. A light or medium color gold leaf is often introduced to fill the interior openings of gold letters on glass; by sizing over the openings of the letters with a little damar varnish, when almost dry, lay on the leaf. This gives the leaf a dead finish and makes a beautiful finish beside the burnished gold of a deeper color.

### ADVERTISING SIGNS.

To make a cheap sign on glass suitable for advertisements, and where a number of the same kind is required, take a smooth piece of paper and cut it the size of the glass; lay off your design, making it backward, place the design on the back of the glass; having previously well cleaned the glass; mix a little fine striping bronze with a little varnish and thin with turpentine. Proceed to outline the letters by the design, which is on the opposite side of the glass; when dry do the shading. A nice shade is made by running a line shade first next to letter with black; when dry go over with carmine shade, then extend to size wanted with vermillion; for a green shade

proceed as the red, using the darker color next to the letter. For a blended shade lay on your back ground, leaving the space for the shade; when dry proceed to put on the colors, working in the lighter shades first; for the back ground use black or some dark color as it is a better contrast to bright colors; when all is dry make a transparent color by using sometransparent colors, such as tube, carmine, ultramarine blue, verdigris green, (distilled), &c., mixing with varnish, going over the interior openings of the letters; when nearly dry, take tin foil, such as come around tobacco and cigars; crumple it up and lay over the letters, when your work is complete.

### GILDING AND PAINTING ON SILK.

Having made a pricked pattern of the design, transfer the same on the silk, using a pounce bag; then go over the lettering, giving it a coat of Japan varnish, (this will not spread on the silk), a clean smooth edge can be made with it. Another way is to go over the silk with a coat of shellac varnish; when this is dry it is ready to letter. For gold letters, size upon the Japaned surface with oil size, taking care not to let the oil get over on the silk; use the tip cushion and knife for laying the gold; smooth the work with fine cotton. If the letters are to be shaded, first go over the silk with the Japan varnish or shellac varnish, following with the colors; high lights should be used on opposite

side of the shading on the edges of the gold lettering to complete the job.

### TO GILD JAPAN TIN SIGNS.

Some tins, owing to the imperfect baking, are softer than others; this is more commonly the case with colored tins, which makes it difficult to make a nice clean job of gilding.

The following method will be a good one: Clean your tin well with soft cotton; if more than one sign is to be made, make a pricked pattern and pounce upon the tin; if only one is to be made the sign can be laid off with chalk crayon, dust off with a soft duster and it will be ready to size; which is made by taking 1 oz. of hard drying varnish, add about ½ oz. of fat oil and enough tube yellow to give it a body; use oil of turpentine to thin to proper consistency to work. When "tacky," which will be in ten or twelve hours, it will be ready to gild; use the knife and tip to lay the gold leaf; do not touch with the fingers, but rub with cotton and the chalk marks will disappear, leaving the tin clean.

Another way to letter on Japan tin is to lay off your lettering or design on stiff smooth paper, (size of tin,) take and scrape off a little red keel, or rub over back of design with dry colors of some kind with finger or pounce bag. Then lay your pattern on tin, keel side down, and go over

the lettering or design with a lead pencil or hard pointed instrument, running the out-lines of letters, &c., when you will find a perfect transfer. Dust off the surplus keel or color with a soft brush and your tin is ready to size, which you can use one part elastic body varnish and two parts English Japan gold size, color with Naples yellow. Use no turpentine as a thinner.

### SIGNS THAT READ THREE WAYS.

Procure your sign board width and length desirable, have a band to project about one and a half inches, have slots cut in the sides of band to receive tins, say one and one half inches wide, cut the slots one and one half inches apart. Paint one sign on the board, lay the tins flat down and paint another on these, turn them over and paint another on the other side. When dry slip the tins in the slots.

### NEW PROCESS FOR LETTERING WITHOUT A BRUSH. ON WOOD, METAL AND GLASS.

Lettering on glass to the ordinary sign painter is one of the most difficult branches of the trade, and most particular so when perfectly straight and clean lines are desired; but by following the directions below, almost any one with a little mechanical skill and good taste can procure the most artistic effects. Burnish stripes and borders, either in gold or silver, can be produced without using

the genuine leaf, and at a very small expense. This new process can be used on wood and metal as well as glass and to good advantages.

I will first begin by giving instructions for making the corrogated gold letter sign, which no doubt is the cheapest and best selling sign, made for show windows, &c.

The tools that are required, is a sharp pointed pen knife, a few straight sticks of different widths and about 4½ or 5 inches long and made from a thin piece of wood, or an old cigar box is good. A straight yard stick, a piece of sole leather about 2 inches square, a camel hair pencil and a ½ inch bristle brush, take a piece of glass the desired size, say 6x24 inches wash the glass perfectly clean, and then dampen with a soft sponge, using clean water only, cut off a piece of tissue tin foil (which can be procured of any large paint house,) the length of the glass and place it down as smooth as possible, and rub gently with a soft cloth or cotton. Now take a piece of writing paper and lay on it beginning at the left end, and rub all the water from under the foil towards the right, with the piece of sole leather, then with a straight edge and pen knife cut out the border for the sign, next cut out the silver to form the letters, the heighth desired, then space off into blocks by using a soft lead pencil to be sure you get the spacing right, then out of the blocks you can form the letters, removing the surplus foil

with the point of the pen knife, then, with a narrow rule, cut out the centers of each letter and remove it from the glass leaving only a narrow edge or skeleton letter: then take a piece of dry paper and with one end of a wooden stick, burnish the letters down smooth, then the sign is ready to paint, which is done by the use of the camel pencil, and using coach black ground in Japan and mixed with turpentine and a little varnish. Have the paint thick enough to cover the glass well. After all is covered except the centers of the letters, lay it down flat to dry, as the paint is liable to run otherwise.

After the paint is perfectly dry varnish around the edges of the letters within ¼ inch of letter and when almost dry or "tacky," you can fasten on the puff gold, by first wrinkling it with the fingers, and pressing down on the varnish. Gold surface foil for cutting borders and for the puff work in the corrugated letters, is made by coating the foil with a quick drying varnish or gold size, using a bristle brush, and when the size is "tacky" lay on "blue elephant florence leaf" and smooth down with a soft brush or a piece of cotton.

Signs finished with pearl, flitters, etc., are done the same way as the above, except leave the letters solid instead of cutting out the centers. You should paint over the entire surface, and after the paint is dry, you can see the form of the letters

above the surface, and by using the point of the pen knife, the letters can be removed; thus leaving a clean, perfect outline, which can be finished in any way desired, either colors, pearl or flitters, which are applied by coating the letters with damar varnish and sprinkle them on while the varnish is wet.

Beautiful effects can be produced by coating the glass with transparent colors mixed in varnish and backing up with gold or foil.

Shading can be done in the most perfect manner by cutting the shade on. in different sections and removing the foil one shade at a time and by blending, and then remove another section. Wood or metal signs can be striped by simply wetting the surface of the foil and burnish. Proceed the same as glass sign.

By sharpening a pair of dividers, perfect circles can be made in any size, using a small piece of rubber to keep the point from slipping on the glass. The most perfect lettering, striping, &c., can be done by forming the design on brass signs and painting over with asphaltum varnish and when dry, remove the foil; then proceed as hereafter described.

### BRASS SIGNS.

Paint over the sheet of brass with a good coat of asphaltum varnish, leaving the part to be itched

unpainted. If you make a border around your sheet of brass, make it about one-half inch from edge of sheet. You can use the tissue tin foil here to good advantage for the border and lettering, and coat over. When dry, run over the foil with the point of a knife.

Raise a border around the outside edge of beeswax or asphaltum, to keep the acid in. Use nitric, diluted one part of water. Pour the acid on the sign about one-fourth of an inch deep. When the letters are all cut deep enough, which must be found by trial, and will take two or three renewals of the acid, then the acid can be poured off, and the plate thoroughly washed; then clean the asphaltum varnish off by heating, and washing with turpentine.

The cement for filling the letters of brass and zinc signs is made by mixing equal parts of asphaltum, shellac and lamp black, or black sealing wax may be used. Apply by heating the plate and melting the cement in, and evening the surface with a warm iron. Then carefully scrape off the surplus, and again hold a warm iron over the letters to glaze the surface.

Or, another formula, is to mix asphaltum, brown Japan and lamp black into a putty-like mass, and then fill the spaces; then clean the edges with turpentine. When dry the whole plate can be polished.

### LAQUER TO COLOR TIN.

Such as is used on signs, tin boxes, cans, &c. Take shellac three-fourths of a pound, gum sandarac three and one-fourth ounces, alcohol two gallons. Color to suit, either with analine colors Prussian blue, carmine red or gamboge yellow, or any transparent colors, ground very fine. Obtain the desired tint by trials.

### GOLD LAQUER FOR TIN.

Use thin copal varnish, slightly colored with turmeric, and baked in an oven.

### TO LETTER ON MUSLIN.

1st. Mix the color with quick drying varnish and Japan and thin with turpentine. Dampen the muslin before applying the color.

2nd. Stretch the muslin tight; go over it with a coat of ordinary starch, about the consistency for laundry purposes; when this is dry it is ready to letter. Mix color as above.

3rd. By mixing the color with benzine and benzine Japan; the wetting process may be dispensed with.

### "NOBBY" NUMBERS.

Take common watch crystals, gild or paint the number on the hollow side; when dry give it a coat of ground; let dry and fill level with plaster of Paris. If the number is to have a white ground it will not need a coating as the plaster of Paris

answers for a white ground; they can be attached by a cement made of white lead and quick drying varnish.

### TO LETTER ON CARD BOARD.

This is quite an important business in sign painting line, and a skillful card writer will get up work very fast; and the cheaper work is what is termed "knocked off letters," which must be made with neatness and uniformity in slant; while card boards are mostly lettered with black, red or blue and a light tint color used for a shace. If the card board is colored use a shade color two or three shades darker than the ground. Mix your colors with a quick drying varnish and thin with turpentine; or, use asphaltum varnish and thin with turpentine.

### TO SHADE GOLD FIGURES AND DESIGNS ON GLASS.

After the gold is laid and burnished down, transfer the design to the gold by means of tracing papers or a pricked pattern and pounce bag; take a hard pointed instrument and trace the outlines of the figures; take two or three flat flitch brushes of different sizes and cut down the bristles to about one-third their usual length; with these shade the design, rubbing out the gold entirely where the darkest shade wants to be made, blending it off to the lighter shades. It is also essential to have several hard and soft wood sticks of vari-

ous sized points and a few needles tied together complete the outfit; and with a good knowledge of drawing the work can be easily accomplished. Back the work up same as gold lettering.

### COATING SIGN BOARDS.

It is a very important thing in sign painting to have well coated boards; for a painted sign the ground should have a glossy surface. To prepare a ground of this kind, if a pine board, kill the knots with shellac varnish; or, if it is a rich piece of pine, the whole board should have a coat; when this is dry give it a prime coat of white lead and boiled oil; let stand for twenty-four hours, then sand paper and putty all nail holes and rough places. For second coat mix white lead with one-fourth part boiled oil and three parts turpentine; if other color than white is to be used the second coat can be colored similar to finishing color; let this stand at least twenty-four hours, sand paper and it will be ready to give the third or last coat which should be mixed with white lead, three-fourths part of boiled oil and one part of turpentine. This will have considerable of a gloss, and with the turpentine it will make the lettering work better and is much less liable to crawl.

For a gold sign the surface should have what is termed an egg-shell gloss; and, to make this, take white lead mixed with one-third boiled oil and two-thirds turpentine, with a small portion of

Japan dryer. This is for the third coat—the first and second coats should be mixed as above stated. It is a good idea to make the third coat a lead color, as the cutting in colors covers better, and the chalk marks for laying off the work show better.

### FOR GOLD SIGNS TO BE VARNISHED OVER.

Give first, second and third coats as for a gold sign, (not to be varnished over.) For the fourth coat add a little more turpentine, and the fifth coat should be a good coat of color and varnish. When this is dry rub down to dead gloss with pumice stone and water and woolen cloth, after it will be ready to size and gild. Before sizing pounce over the surface with a little whiting to prevent the gold from sticking to the ground. Mix the sizing for this kind of work of four-fifths coach varnish, one-fifth fat oil and a small portion of chrome yellow, finely ground. Thin with turpentine, and when "tackey" it is ready to gild. The shading colors should have but little oil in them, and they should be joined up to the letters which help to straighten them up.

### TO CRYSTALIZE OR CLOUD TINS FOR SIGNS, &C.

Take 2 ozs. sulfuric acid, 1 oz. soft water, 1 tablespoonful of common salt; place the tin on the stove and warm it, (do not get too hot or will discolor tin), pour the acid in a glass or porcelain

dish or cup, add the water, and just before using add the salt. While the tin is warm apply the mixture with a sponge tied on a small stick as speedily as possible. When over wash off with clean water, when the tin is ready for the colored varnish, using fine transparent colors, carmine, verdigris green, (distilled), ultramarine blue, &c.

Another method is, to place the tin plate, slightly heated, over a tub of water, and rub its surface with a sponge dipped in a liquid composed of four parts aqua fortis, two parts of distilled water and one part of common salt, or sal ammoniac, in solution. When the crystaline spangles seems to be thoroughly brought out, immerse the plate in the water, washing it with either a feather or a piece of cotton, taking care not to rub off the film of tin that forms the feathering. Then dry with a slow heat and coat with a laquer or colored varnish, or otherwise it loses its luster in the air. If the whole surface is not plunged at once into the water, but is partially cooled by sprinkling water on it, the crystalization will be finely varigated with large and small figures.

### HOW TO ATTACH WHITE ENAMELED LETTERS TO WINDOWS, &C.

Take a quantity of dry white lead and sift it through a seive, so it will be entirely free from lumps, then moisten it up with copal varnish and mix throughly until it becomes the consistency of

soft putty, when it is ready for use. Make only what you want to use that day as it dries out quickly and is not so good if it is softened with oil, turpentine or varnish; though it may be softened with either of these.

The easiest and best plan for inexperienced persons, is to take a sheet of common manilla wrapping paper just the size of the window or glass, lay the paper down on a table and arrange the letters on the paper in the shape and space that you want them to appear on the window or glass; when all is properly arranged to suit, take a lead pencil and mark around each letter as they lay; then lift your letters up and paste or tack the paper on the inside of the window, which will show on the outside plainly. If the letters are to be put on wood or other surface than glass, then you will have to draw out on the board or sign that is to contain the letters, the plan of arrangement that you may prefer, straight or curved, with white crayon. Apply the cement to the back of the letters with a knife, laying on equally around the edges only, the inner edges as well as the out, and put the same on the outside of the window or surface, as above directed, in the space marked for it; then work the letters back and forth, up and down, pressing them closely so as to expel the air and secure a good adhension. Be careful to press the letter equally on top and bottom else it will

break. For large and heavy letters use small pieces of common beeswax (or in summer sealing wax) to keep the letters in proper position until the cement sets. After a couple of hours or so take a piece of wood, sharpen it on the end, keep the same wet, and clean away the superfluous cement. Particular care should be taken to leave no openings between the letters and the glass, and especially around the top which would allow the water to run in between. For removing the enameled letters, the method most convenient is to scratch away around the edges all the cement you can from under the letters. Use for the purpose a very thin knife or a piece of thin sheet steel. You will soon reach the soft part of the cement; then cut away with a sawing motion, and twist them off. Do not attempt to pry them off else you will break them. If the cement should be very hard, use a little kerosene oil, which is applied on the top edge of letter, so as to work in and soften the cement.

### A GOOD, CHEAP WASH FOR GROUND WORK, FOR ADVERTISING SIGNS ON FENCES, BARNS, &C.

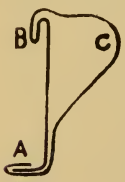
Take 6 lbs fresh, unslacked lime, add enough warm water to cover it, (and keep it covered with water while slacking), 12 ozs. boiled linseed oil, 4 ozs. white burgundy pitch; dissolve the pitch in the oil, add to the lime, while it is slacking and is warm, add 6 lbs spanish whiting and 1 gal. skim

milk; stir well and thin to proper consistency with water. The above makes a good wash for out buildings.

### HOW TO MAKE YOUR OWN CUP HANDLES.

As nearly all house and sign painters buy their coloring already ground, in one and two pound cans, and as the cans are of but little use, unless they contained handles, which make them very handy to the sign painter to mix small batches of color in, I have invented a handle which fills a long felt want.

They are very simple to make, and in a few minutes time you can make, or have a tinner make. all that you would need for a year. Take a strip of tin or sheet iron (that will not break in bending it) from one-half to three-fourths of an inch in width; make a square angle one-half inch from end, which is to form the bottom A, then run up the length that the cup is high, make a short turn come down the upright piece one-half inch, make another short turn running back to top B, thence out, forming the oval or finger holt C, come back to upright piece and on to bottom running around bottom A, press the metal together at A and the handle will be completed. To adjust to cup place the top edge of cup in the slot at B, then slip projection A under cup, The material you can find at any tin shop in the



way of scraps, and by the aid of a pair of pliers and a pair of shears you can make them very fast. You should make three or four different sizes to fit the different sized cans.

### STENCIL CUTTING.

Advertising signs are extensively used, and where a sign painter has a number of the same design, and, owing to the cheapness which such work must be done, the painter would find very slow work to letter by hand; so by cutting a stencil of the design and stenciling the letters on, the work may be done very rapid. Take a piece of opaque window shading the size of the sign board, leaving about one and a half inches all around for frame, laying off your lettering, &c., with lead pencil; proceed with the point of a sharp knife to cut out the letters, using care to leave small bars so parts in the center of letters will not fall out and spoil the letter. A little practice will enable the new beginner to become efficient in that part. This stencil, if properly used, will last to make several hundred boards. Use a regular stencil brush which is square on the end. In stenciling bring the brush square down on the letters; do not rub the brush along, else you run the color under the stencil and blur the letters and spoil the stencil. The color should be heavy and used sparingly. To handle the stencil more handily, make a light frame to extend at least around one side and both ends;

tack the goods on frame so one corner of the sign board will come in some one corner of the frame. In that way you can work in two or more colors in the lettering by having a separate stencil for the part or parts of letters for each color; and so arrange the stencil on the frame so the letters will come in the proper place when the corner of the sign board is placed in the corner of the frame which you have heretofore used. Heavy paper, well oiled, makes a very good stencil, but is not as strong as the opaque shade goods.

Or, take a heavy piece of manilla paper, a day or so before using it, tack it up some where, and give, on both sides, a good coat or two of boiled linseed oil. This toughens the paper and makes it pliable. Stencils should be cut out on a piece of glass to have smoothe edges, otherwise they will be rough.

### STENCIL COLORS.

To be used on a painted surface and varnished over, should be mixed with turpentine and enough varnish to prevent the color from spreading, when varnished over.

### PRICE LIST OF SIGN PAINTING.

### WOOD OR ZINC SIGNS, COLORED LETTERS.

Plain grounded or smalted per lineal feet, 20 cents, each shade 5c extra.

WOOD OR ZINC SIGNS IN GOLD AND SMALTED.

| | |
|---|---|
| 4 to 8 inch letter, per lineal foot | $ 50 |
| 8 " 10 " " " " " | $ 60 |
| 12 " 18 " " " " " | $ 80 |
| 18 " 24 " " " " " | $ 1 20 |

LETTERING ON GLASS IN COLORS.

| | |
|---|---|
| 3 to 12 inches plain, per lineal foot | $ 25 |
| Shaded " " " | $ 30 |
| Fancy shading " " " | $ 40 |

LETTERING ON GLASS IN GOLD.

| | |
|---|---|
| 5 to 8 inch letter, per lineal ft. Plain | $ 90 |
| 8 " 12 " " " " " " | $ 1 00 |
| One shade " " " Extra | $ 10 |
| Two " " " " " | $ 25 |
| Fancy " " " " " | $ 40 |

DRUM OR SIDE SIGNS.

Per square foot, $2.

BRASS SIGNS.

Window plates, 9 inches wide, $2.50 per running foot; ten to 14 inches, $3.50 per running foot; brass drum or side signs in brass, $3.50 per square foot.

# PART III.

## MISCELLANEOUS.

### ETCHING ON GLASS WITH ACID.

This, strictly speaking, cannot be called a branch of sign painting, but a thorough knowledge of it will be an advantage to every sign painter. It consists of engraving or cutting letters, numbers and ornaments on glass, either colored, plain or ground, for doors, offices, vestibules and churches, by which process it can be done cheaper than the usual mode of grinding. There are two kinds of colored glass. One is colored entirely through the glass, while the other only on one side; the latter is only suitable for etching purposes. To proceed, first make a pricked pattern of your letters or design and pounce it on the colored side of the glass, (if it be a colored glass), then cut in the letters carefully with a protective varnish, which is made with equal parts of asphaltum and paraffine or virgin wax, mixed hot, and thin with turpentine. When this is dry take beeswax and make a raised border all around the out edge of the glass; then pour on hydrofluoric acid until the let-

ters or parts which it is on is all covered. Let it remain until the colored portion of the glass is eaten through, then pour off the acid and wash well with water; remove the beeswax edge, then the protective varnish, and the letters will be clear while the balance will be of the original color. Work can be done on ground glass in the same manner as on stained, colored or plain glass, the letters being cut in and the balance of surface filled in with the protective varnish. The acid will dissolve the ground surface, leaving it clear, and when the varnish is removed the letters will be clear, while the rest of surface is ground; or, you can take a plain, clear glass, lay off your design and cut in with protective varnish, &c., as above directed; and when the acid has eaten into the surface pour off and clean the glass well with water and remove the varnish; then take flat pieces of brass large enough so it will pass over the letters and not dip into them; take flour of emory and keeping it wet you can grind the whole surface very quick, the letters having been eaten below the surface. As hydrofluoric acid is destructive to glass, it must be kept in lead or gutta percha bottles.

### PORCELAIN GILDING.

Dissolve in boiled linseed oil an equal weight, either of copal or amber ; add as much oil of turpentine as will enable you to apply it as thin as

possible to the parts intended to be gilded. The ware is to be placed in a stove until it will almost burn the fingers when handled; at this temperature the size becomes adhensive and the gold leaf applied the usual way will stick. Dust off the surplus portions of the leaf and when cold it can be burnished, placing a piece of India paper between the burnisher and the gold.

### HOW TO MAKE PHOTO-OIL MINIATURES.

This work is all the rage in some cities, and while it does not come under the head of sign painting, any person with degree of skill and a knowledge how to mix colors, with a little practice, can soon produce good work. First take your photograph, and if mounted on card, soak in warm water until the print will readily come off of the card, then dry the print and paste on the hollow side of a concave glass, which are made purposely for this kind of work and can be procured at an artist's or photographer's supply store; use paste made of common starch; apply to front side of print and also to the glass, taking great care to get all of the small blubbers and small particles of paste which will require considerable of rubbing; let it dry and take two parts of sweet oil and one part of oil of lavender and pour on the print and let it stand until the print becomes thoroughly transparent; then pour off the oil and wipe with a clean rag or piece of chamois

to take off the surplus oil. Take another glass like one already used, place it on back of print and when properly fitted commence your painting; use tube colors and small brush. Commence with the face, make it a flesh color; and the hair, making it as well as the eyes, dress and drapery as near the color of the original as possible; then give the back ground a dark drab color; when this is dry cut a piece of card board the size of the glass and lay it on the back; then take gummed or pasted strips of paper about ⅝ of an inch wide and run around the edge of card board and let it lap over or around on the front glass about one-eight of an inch, thus keeping the card board and glass in proper place. This completes the picture ready for framing.

NEW METHOD FOR PAINTING ON VELVET.

Although simple, is far superior to Kensington painting, and can be handled in any manner that the velvet will stand without injury to the painting. First trim your brush with a pair of scissors until the hair in the brush is only one-eighth of an inch in length, make it round at the point. Place your tube paint on a piece of ordinary blotting paper, to allow the oil to be soaked up; then having previously stamped your design on the velvet, dip your brush in the paint and proceed to comb the nap of the velvet with the stiff brush you have trimmed for the purpose. The depth of the shad-

ing you will find to be proportional to the number of times you have applied the brush in the manner described, as the combing of the nap with the stiff brush simply stains the nap and leaves it flexible, and of course more durable than any other process.

### HOW TO DO WET STAMPING.

Take French zinc ground in oil, thinned with boiled linseed oil to the thickness of heavy cream. Lay pattern on goods and apply the paint with a case knife to the smoothe side of the pattern, clean the pattern with a brush and gasoline.

### TO SILVER ON GLASS.

I. Dissolve 12 grains Roschelle salts in boiling water, then add while boiling 16 grains of nitrate of silver, having been previously dissolved in one ounce of water; continue to boil for ten minutes, then add water enough to make in all 12 ozs.

II. Dissolve 1 oz. nitrate of silver in 10 ozs. of water, then add liquid ammonia until the nitrate of silver is nearly, but not quite, dissolved, then add 1 oz. of alcohol and sufficient water to make in all 12 ozs.

To Silver:—Take equal parts of Nos. 1 and 2, mix thoroughly, then pour upon the glass in the same manner that a photographer applies his solutions. It should be applied while the glass is wet; the glass should be previously well cleaned.

Distilled water should be used in making the solutions. The solution should stand two or three days before using.

### TO SILVER BY HEAT.

Dissolve 1 oz. silver in aqua fortis and precipitate it with common salt, to which add ½ lb. sal ammomac and white vitriol and ¼ oz. of corrosive sublimate.

### TO SILVER GLASS WITH QUICKSILVER.

Lay a piece of tin foil (not lead foil) on a smooth flat surface and pour mercury over it to a depth of one-sixteenth or one-eighth of an inch. Slide the perfectly clean glass plate over it with the advancing edge just below the surface of the mercury, so as to bring a new surface of amalgam against the glass. Then leave the glass for a while under pressure, and finally place it on edge to drain.

### GOOD LAQUER FOR BRASS.

Take ½ oz. best shellac to 1 pt. 95 degrees alcohol. Let it stand a few days in a well corked bottle, then decant the pure tincture; when settled it should look clear like wine; thin if required by adding more alcohol. Thin laquer makes the best finish.

### TO TAKE OIL AND RUST STAINS OUT OF MARBLE.

Apply common clay saturated with benzine. If

the grease has remained long enough it will have become acidulated and may injure the polish, but the stain will be removed.

Another formula is to take 1 oz. of ox gall, 1 gill of lye, 1½ tablespoonfull of turpentine, mix and make into a paste with pipe clay, put on the paste over the stain and let it remain for several days.

Iron rust or ink spots may be taken out by taking half an ounce of butter of antimony and one ounce of oxolic acid, and dissolve them in one pint of rain water; add enough flour to bring the mixture to a proper consistency to lay it evenly on the stained part with a brush. Let it remain a few days, wash off, and if not wholly removed, repeat the process again.

### TO REMOVE INK STAINS FROM WOOD.

Apply spirits of salt with a rag until the spot disappears, then wash immediately with clean water.

### TO REMOVE INK STAINS FROM CARPETS.

Take solution of oxalic acid or citric acid and follow up with a copious washing with cold water.

### HOW TO MAKE OLD PICTURE FRAMES LOOK AS NICE AS NEW.

Varnish the frame, and while the varnish is fresh, sprinkle clean, coarse sand upon it; let it stand until dry, then give another coat of varnish

over the sand, and, when almost dry, bronze over with good gold bronze. A more beautiful effect is obtained by only sanding part of the frame. This can be done by only varnishing such parts as you wish to have rough. Other parts can be finished in plain bronze, imitation ebony, walnut or cherry.

### PICTURE FRAME MAKER'S PUTTY.

Take whiting, glue and water, worked very stiff. The mould should be oiled. If you wish it to dry slow, add a few drops of glycerine to the putty.

### TO VARNISH DRAWINGS, &C.

Dissolve one ounce best isinglass in a pint of water by simmering it over the fire; strain it through a fine muslin and keep it for use. Try the size on a piece of paper, moderately warm. If it glistens it is too thick and requires more water. If it soaks into the paper it is too thin and needs more isinglass—it should merely dull the surface. Then give the drawings two or three coats, letting it dry between each coat, being careful—particularly the first coat—to bear very lightly on the brush, which should be a camel hair, from which the size should flow freely. When dry, take best mastic varnish and give three coats. This is the method used by the most eminent artists.

### LIQUID GLUE.

Take a wide mouthed bottle and dissolve in it

8 ozs. best glue in half pint of water, by setting in a vessel of water and heating until dissolved. Then add, slowly, 2½ ozs. strong nitric acid of 36° Baume, stirring all the while effervesence takes place with generation of fumes. When all the acid has been added, allow it to cool. Keep it well corked and it will be ready for use at any moment.

### GOOD MUCILAGE.

Take gum dextrine two parts, water five parts, acetic acid one part; dissolve by aid of heat, then add one part alcohol.

### RUBBER CEMENT.

Fill a bottle one-tenth full of real India rubber cut into small pieces, pour in benzole until the bottle is three-fourths full. Shake every day until the mixture is as thick as honey. It is useful in mending rubber goods, leather straps, &c.

### CEMENT TO FASTEN RUBBER TO IRON.

Take pitch and gutta percha, equal parts, and melt together.

### CEMENT TO FASTEN WOOD TO METAL.

Add a small per cent. of glycerine to glue will make wood adhere to metal. Or, a small amount of molasses added to glue will act in the same way. Tannin added to glue makes it strong and adherent. Bichromate of potash renders glue water proof.

### A GOOD CEMENT FOR VARIOUS PURPOSES.

Procure a lot of old paint if possible, the skins forming on top of paints, settlings from the bottom of paint pots or any refuse that contains oil, zinc or other mineral body, may be used. Reduce this mass, if hardened from standing exposed to air, by soaking in some cheap oil. Heating may be resorted to if the hard paint cannot be softened. When the whole mass has become soft enough to be stirred, more oil may be added, and the whole worked through a seive and then run through an ordinary paint mill.

A quantity of whiting is next worked into the paint until almost thick enough for glazing purposes. Then add a quantity of good Portland cement, sufficient to bring the putty to consistency, which will enable it to be handled readily, when it may be worked into cracks of brick or stone, and, when allowed to dry and harden, it will become nearly as hard as iron, impervious to moisture and any reasonable degree of heat.

### CEMENT FOR STOVES, &C.

A good cement to close cracks in cast iron stoves and stove pipe may be made by sifting wood ashes, and take equal quantity of pulverized clay and a little salt, moisten with water to make a paste, and fill the cracks while the iron is cold. The cement will neither peel nor break, and becomes very hard after heating.

### TO TRANSFER ENGRAVINGS TO GLASS.

Clean your glass perfectly clean, and varnish with copal varnish. Lay the engraving on the glass and rub down well, taking care to rub all the air bubbles out. Let this stand for twelve hours or more. Then wet the paper thoroughly with a soft sponge or cloth and it will be easily removed, leaving the impression perfect upon the glass. You can back up with white or any color to suit. If your picture is colored, add about one gill of vinegar and one teaspoonful of salt to the water.

### TO ETCH ON STEEL.

Mix one ounce blue vitriol, one-fourth ounce of powdered alum and one-half teaspoonful of salt reduced to powder, with one gill of vinegar and twenty drops nitric acid. This liquid may be used either for eating deeply into the metal or for imparting a beautiful frosted appearance to the surface, according to the time it is allowed to act, by coating the steel with parafine or beeswax and parts to be etched. Scrape away with a pointed instrument. Or, smear over with soap, and write with a quill pen not split.

### TO GLAZE OIL PAINTINGS.

Take of mastic six ounces, pure turpentine one half ounce, camphor two drachms, spirits of turpentine nineteen ounces; add first the camphor to the pure turpentine. The mixture is made in a water bath. When the solution is effected, add

the mastic and the spirits of turpentine near the end of the operation. Filter through a cotton cloth.

### TO CLEAN CARPETS ON THE FLOOR.

Take a pail full of water and add three pints of oxgall, wash the carpet with this until a lather is produced, then wash off with clean water, then let dry.

### TO PERFORATE GLASS.

To make a small hole in a piece of glass is a comparatively simple matter. All that is required to do it is a very hard, sharp drill and some means for turning it, and a lubricant, such as turpentine to cause the drill to cut rapidly. A drill made in the usual form from steel wire or an old file and hardened by heating it until it is a dark red, and then plunged into mercury, will be very hard but not tough. But, before the drill is heated, it should be driven into a block of lead so that its point will just be enclosed by the lead; and after the drill has been hardened in the mercury, its point should be inserted in the indentation in the lead, and the temper of the shank of the drill should be drawn over a lamp or gas flame to a blue color, to within a short distance of the lead. The drill, together with the lead, should be plunged into cool water. The lead prevents the drill point from becoming heated sufficient to draw the temper, by conducting it away as fast as

it arrives at the point. The drill prepared in this way should be wet with turpentine while in use to cause it to take holt. It is advisable to drill from opposite sides of the glass when possible. A good drill stock can be made to operate the drill by taking a round piece of wood say one inch in diameter and twelve inches long; at top end should have an oval knob made to turn, which is held in the hand. At four and one-half inches from top should have a hole in stock, which should tightly fit an arm about six inches long, with a weight to outer part of arm. Place the drill shank in bottom of stock, place your hand on top of stock, and keep the drill revolving by means of the weighted arm. By a little practice it will be an easy matter to cut a hole through a piece of glass, which very frequently becomes handy to sign painters to make hanging glass signs.

### TO REMOVE PAINT OR GREASE SPOTS FROM CLOTH.

Use benzine or chloroform. First apply it in a circle all around the spot without touching it, then sponge off the spot. Never put it direct on the spot or you will produce a ring-shaped stain.

### STICKY FLY PAPER.

A sticky fly paper can be made, which will be very desirable in the varnish room, as follows: Take three and one-half ounces raw linseed oil, one pound resin and three and one-half ounces

molasses and dissolve all together by heating, and spread on papar with a stiff brush.

Or, another formula is to take resin 14 parts, Burgundy pitch 4 parts, molasses 4 parts and linseed oil 4 parts. Dissolve the resin and pitch in the oil by heating, then add the molasses. Use heavy calendered paper, or in a few days the paper will be sticky on both sides.

### RUBBER STAMP INK.

Take 2 to 4 drachms of aniline, (desired shade), 15 ozs. alcohol and 15 ozs. glycerine. Pour the solution on the pad and rub in with a brush. Another way is to take 1 part gelatine. 1 part water, 6 parts glycerine and sufficient coloring of aniline.

### MARKING INK.

For the use of a brush, is made with 2 oz. shellac, 2 ozs. borax, 25 ozs. water, 2 ozs. gum Arabic, color with lamp black, adding until the proper consistency. Can be used for stencil ink by being made somewhat thicker.

### BLUE-BLACK COPYING INK.

Take of aleppo galls, bruised, 9 ozs., bruised cloves 2 drachms, cold water 5 parts, sulphate of iron 3 ozs., sulphuric acid 70 minims, sulphate of Indigo (thin paste) 4 drachms. Put the galls and cloves into a gallon bottle and pour in the water, shake often and let stand for a fortnight. Press

out and filter out through filtering paper into another gallon bottle. Next add the sulphate of iron; when dissolved add the acid and shake briskly, then add the Indigo. Mix well and again filter. Keep into a well corked bottle.

### WHITE WRITING INK FOR DARK PAPER.

Use Chinese white, rubbed up with gum Arabic water. Or, for blue paper, use a solution of oxalic acied (poison). Use a gold or quill pen. This last is an excellent method for writing white on blue paper, and it gives a permanent ineffaceable record.

### TO PREPARE CANVAS FOR PAINTING.

Size with thin glue size, with about one ounce alum to the gallon of size. Then apply moderately thick two or three coats of white lead, colored to suit.

### TO REMOVE TOBACCO STAINS FROM PINE FLOORS.

Take one part calcined soda and allow it to stand ¾ of an hour in 1 part slacked lime, then add 15 parts water and boil. Spread the solution thus obtained upon the stains, with a rag, and after drying, rub with a hard brush and fine sand and water.

A solution of 1 part concentrated sulphuric acid in 8 parts of water will enliven the wood after the above application and when dry wash the floor with clean water.

### TO OXIDIZE SILVER, A GLOSSY BLACK.

Use a solution of sulphide of potassium; polish the metal before, and rub with a soft rag or chamois after the immersion. To oxidize copper or orvide to imitate bronze, use the same bath only have it quite dilute. If for out side work, simply oil with olive oil and let the weather do the rest.

### SOLUTION FOR COLORING BRONZE HINGES, &C.

Take 1 pt. water, 5 drachms perchloride of iron. The article must be perfectly clean and dipped in the hot solution until the required color is obtained. Then dipped into clean hot water. Dry and laquer. If only a varnish is required. use clear shellac varnish, color with dragoon's blood gum and burnt umber.

### PAINT AND GREASE ERADICATOR.

Take of aqua ammonia 2 oz.; soft water 1 qt.; saltpeter 1 teaspoonful, shaving soap in fine shavings 1 oz. Mix and when dissolved well, will be found an excellent grease and paint remover.

### TO REMOVE STAINS FROM "BROWN STONE."

Dissolve rock potash in boiling water, making a strong solution, and apply to the stained or discolored parts.

### LIQUID STONE POLISH.

Mix 2 parts copperas, 1 part of bone black, 1 of

pulverized graphite, with sufficient water to form a creamy paste.

### IRON PUTTY FOR STEAM JOINTS.

Is made by mixing dry, 2 parts good metallic paint, 1 part litharge, 3 parts of fine iron filings. To this add boiled linseed oil and mix to the consistency of stiff putty.

### CLEANING AND POLISHING PASTE, FOR BRASS, NICKLE, SILVER AND ALL KINDS OF METAL.

Take oxalic acid 1 oz., iron preoxide 15 oz., powdered rotten stone 20 ozs., palm oil 60 ozs. and vaseline 4 ozs. Pulverize the oxalic acid and iron preoxide and rotten stone, and mix thoroughly and sift to remove all grit; then add gradually the palm oil and vaseline, mixing thoroughly.

### LIQUID BLACKING

That will make a good and quick shine. Take gum shellac 1 oz., dissolved in one and one-half pints of alcohol; then add three-quarters of an oz. gum camphor and one oz. lamp black.

### TO GLUE LEATHER OR WOOD TO IRON.

Take good, tough glue, add 12 drops of glycerine to the half pint of glue. The iron should be made perfectly free from oil or dirt, and the part to be glued should be thoroughly scratched over with a file. Then apply a solution of one part of nitric acid and one part of water, to deaden the surface, let stand for a minute or so then wash off

with hot water to free it from the acid. Then proceed as ordinary gluing.

### TO GUM LABELS.

Take dextrine 2 parts, acetic acid 1 part, water 5 parts, and alcohol 1 part.

Another formula is to take gelatine 2 parts, rock candy 1 part and water 3 parts. Dissolve and it is ready for use.

### LIQUID BLUEING FOR LAUNDRY WORK.

Take 1 oz. soft Prussian blue, powder it and put into a bottle with 1 qt. of clear rain water, and add ¼ oz. oxalic acid. A teaspoonful of this is sufficient for a large washing.

### GLOSSING CUFFS AND COLLARS.

Pour 1 pt. of boiling water upon 2 ozs. gum arabic, cover it over and let set over night. Use a tablespoonful of this in the starch.

### A GOOD HARNESS GRASK.

Take 1 qt. Neat's foot oil, 4 oz. beef's tallow, and 3 tablespoonful of lamp black; add 4 oz. of beeswax for summer use.

### BOOKBINDERS GLUE FOR TABLETS.

Take 5½ lbs. best dry glue and 1 lb. glycerine, soak the glue for an hour or so and heat to solution and add the glycerine. If too thick add more water. Color with aniline dissolved with alcohol.

### TO MAKE COUGH CANDY.

Take tincture of squills 2 ozs., camphorated tincture of opium and tincture of tolu each ¼ oz., wine of spicac ½ oz., oil of wintergreen 4 drops, sassafras oil 3 drops, anise seed oil 2 drops.

Put the above mixture into 5 lbs. of candy which is just ready to take from the fire, and then boil a little longer.

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